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ABSTRACT

This six-culture study sought to make a first approximation measurement of differences in personality development and the socialization of these differences in children. The study was part of a larger strategy involving other cultures and methods. A sample of 24 children from each of the six cultures was selected and observed during at least 12 five-minute periods. There was an attempt to attain a "slice of life" which would reflect the modal behaviors engaged in by the sample children and the modal behaviors received by the modal child. The six cultures studied included: (1) a New England Baptist community; (2) a Philippine barrio; (3) an Okinawan village; (4) an Indian village in Mexico; (5) a northern Indian caste group; and (6) a rural tribal group in Kenya. Exhaustive findings are reported on all respects of the "aggression domain" as they compare cross-culturally. (Author/PC)

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December, 1974

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Robert Cole

Michael Mann

Paul Poppen

Allen Tan

Others deserve much appreciation as mentioned within.

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John and Ann Fischer

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1 Introduction

This report is tardy for some good reasons as well as some reasons which are not so good. Since its inception the six-culture study has been viewed by the senior investigators as a mutual learning situation in which they were joined with a number of younger investigators and graduate students. The project as a whole represents a facet of the growth of the use of computers for handling large scale data. At Cornell in particular we have had a very fruitful relationship between young people (with new methods) and the data (and design) from the six culture study. The project has supplied material for a number of seminars both at Cornell and the University of the Phillippines in Manila as well as brief courses or lecture series at the London School of Economics and Political Science and at the University of Padua in Italy. We hope that the pedagogical aspects of this project will continue, since there are still worthwhile analyses to be done.

We should immediately make some acknowledgements to at least some of the very able young people who have aided in developing the data which lie behind this report. Dr. Allan Tan who is now an assistant Professor of Anthropology and Psychology at the University of Pittsburgh, became interested in this project while the senior investigator was lecturing at the University of the Phillippines. Since that time Dr. Tan has directed a good deal of the analysis and has written a portion of the first draft of this report. Dr. Paul Poppen who is now an assistant professor at George Washington University, directed one version of our extensive analysis of the targets of aggression and has also aided in preparing material for this report.

Larry Noyes worked for the project during the summer of 1974 and has continued to finish up aspects of analysis some of which are too recent to be included in this report. The mammoth settings analysis which permitted us to look at the probabilities of aggression in the children's behavior as a

function of 15 ways of breaking down the settings in which the action occurred, was greatly advanced by work in a seminar at Cornell by Winfred Buckwalter and Roy Williams with advice from Barbara Fleischmann and others.

Robert Cole (who is writing his thesis and directing research in University of Rochester Medical School) has done a great deal to integrate the material of the settings analysis with the Mother Interviews and other information in the six-culture study. Most of his work is reported in the pages that follow but will probably appear as a separate publication. Michael Mann who is now at the University of Washington in Seattle and has a doctorate in Behavioral Biology, did a great deal of work in analyzing the events that followed acts of aggression by the children in our samples. Much of this report grew out of work that was started by Dr. Mann and separate publications will probably involve him.

We should certainly acknowledge the advise and earlier physical help of Prof. Richard Longabaugh of Brown University. The continuing advice and support of John and Beatrice Whiting and Larry Baldwin of the Harvard team is also greatly appreciated.

There is a longer list of people who have contributed at one time or another. Barton and Trinadad Sensenig, Mary Beth Mackin, William Renwick have all made substantial contributions.

This work was aided in part by Guggenheim Fellowship to the Senior Investigator who lectured on some of these topics at the London School of Economics and at the University of Padua, while also aided by the Fullbright Program. The Senior Investigator, in the summer of 1973, journeyed to Monte Carlo for an international NATO Conference on Aggression and this trip was aided by the Cornell Center for International Studies.

We should never forget, of course, that the data being analyzed in this project was originally collected by field teams from Harvard, Cornell and Yale which included some of the most outstanding young behavioral scientists of their generation. They include Doctors William and Corinne Nedegger, Leigh Minturn, Kimble and Romaine Romney, Hatsumi, and Thomas Maretsky, Robert and Barbara LeVine and John Hitchcock. And, in turn, we should never forget our debt to the kind and patient children and parents of "Six Cultures" who aided the whole endeavour.

We should also mention to all readers of this report that a great deal of detail about the Six Culture project is soon to be readily available in the forthcoming volume entitled Children of Six Cultures: A Psycho-cultural Analysis by Beatrice B. Whiting, John W.M. Whiting, in collaboration with Richard Longabough and others. A closer report on the observation methods used in the field will be found there, along with a description of the analyses (and their reliability) done back at Harvard and Cornell, descriptions of the six cultural contexts themselves, and data on the family size and composition in the various communities and an evaluation of the success we had in sampling a "slice of the life" of each of the children in the six samples.

2. Basic Design and Method of the Study

The plan of the Six-Culture study and the methods used to implement the plan are outlined in a separate volume by Whiting, Child and Lambert et al., entitled Field Guide for Study Six-Cultures (Wiley, 1962). The aims of the study were to make a first approximation measurement of differences in personality development and the socialization of these differences (as well as similarities). All this was done while focussing on the particular theoretical interests of the senior investigators at the time the study was conceived. These interests were in the areas of aggression, dependency, and internalization of behavior control. The Six-Culture Study was part of a still larger strategy involving other cultures and other methods such as the use of the Human Relations Area Files in an attempt to test hypotheses having to do with these areas of interest.

The Field Guide volume includes a large number of hypotheses which were constructed at Cornell, based on theory and the existing literature of the period and some of the thinking of that Guide is reflected in this report.

The design of the study originally called for 50 children from each of the Six-Cultures but it was early found that, given the basic unit of study (that of a portion of a village or section of a city which has a name and where more than one generation of people have been reared or will be reared) it would sound quite impossible to find that large a number of children of the correct age and sex. Therefore a sample of 24 (in all cases but one) was drawn from the available supply of children. We permitted only one child from each household to be in the sample so the sample also reflects households. It was hoped that research could become cumulative in these cultures by selecting groups which had recognizable characteristics to which researchers

could return either to the same individuals and families or to culturally and historically similar ones.

It was originally a blow to have to face the smaller number of children as the basis of testing the hypotheses, but the number has been barely adequate to test hypotheses within societies occasionally but more often where standard scores are used (and the culture is ruled out of consideration statistically) or in terms of age groups or sex groups or cultural groups themselves. The array of possible levels of analysis and various forms of possible hypotheses to be considered in the exploring of these data has made the endeavor interesting and rather long lived despite the interest of a number of students over the years.

Let us return to the design. The children were selected from the age groups of 3 11, since it was felt that these were the years when a great deal of change occurred and when a great many phenomena in the realm of aggression would be more palpable than they would be at later ages. The design called for half the children to be from 3-6, half from 6-11. Half of them were female; half were male.

Extensive mother interviews were held with the children. The interview schedule was a revised version of the interview used in the classic study by Sears, Maccoby and Levin on child training patterns in the United States. Verbal thematic apperception tests were devised to be used in the study, and the children themselves were interviewed in a simple and direct manner in which they were asked to describe their own behavior or typical behavior under varying situations. Interviews were held with fathers in some cultures but not extensively enough for statistical consideration.

As our colleagues at Harvard have recently pointed out in a new monograph based on the Six-Culture study: "To obtain significant differences, relationships

between variable had to be both strong and consistent. On the other hand with such small sample sizes little confidence can be placed on the failure of the data to support an hypothesized relationship. In other words the study is particularly vulnerable to what the statisticians refer to as "type 2 error." Despite this defect the opportunity of a 6 fold replication of intercultural hypotheses and the opportunity of testing the same hypothesis both within and across cultures is a powerful feature of the design and makes up to some degree for the inadequacy due to the small sample size."

There are two additional hallmarks of the design of the Six-culture study in which the Cornell group were particularly interested and to which they contributed. One of these was the emphasis upon time-sampled observations in 5-minute periods. At least 12 or more of these 5-minute periods were observed for each of the children in the samples. Usually two observers (one field worker and another a local bilingual person) observed the behavior of a particular child (or P as we referred to the child as a contraction of "person"). A child's behavior was recorded as fully as possible by both observers usually and then a final protocol was developed by the two observers working together. A careful record of the setting of the behavior which included many features having to do with who was present (in addition to the sample child who was the focus of the particular observation) and the sampling was done with an attempt to give representative weight to the settings in which the modal child of a culture spent his time. In other words the attempt was to attain a "slice of life" which would modally represent the life of each of the children but at least more accurately reflect (in the aggregation of the behavior and the observations) the <u>modal behaviors engaged in</u> by the sample children and the <u>modal behaviors received</u> by the modal child. That is, for the purpose of intra-cultural analysis and the study of individual

differences between children, we hoped to sample the lives of individual children. For purposes of cultural comparison, or age or sex group comparisons, or for the study of cross cultural uniformities, we aimed at something which approximated a slice of life for the children of the fast changing ages under study.

It is interesting to note that as we now approach a final writing up to this long project, our interests have shifted. When we wrote our original hypotheses and designed the study we planned for a relatively short analysis which would use the mother interviews, TAT's and observations as a source of the dependent variables. A rather simple relating of the two to test the early learning-based hypotheses would conclude the analysis. This is now only a small portion of the kinds of questions with which these data have been explored both at Harvard and here at Cornell, and as a matter of fact, a good many of the original hypotheses have been explored only in passing and with not the focus that one would have expected from the early Field Guide. It is intriguing that both the analysis and the recent monograph from Harvard and the present analysis rest upon more recent developments in conceptualizing and on a possibly more sophisticated and less hopeful approach to hypotheses dealing with the origins of individual and cultural differences and similarities.

In planning for the analysis of the aggressive data of the children, the Cornell group received considerable stimulation from the cognitive approach of A.L. Baldwin who was an active advisor to the Cornell side of the project, and by the work on settings and behavioral units by Barker and Wright who also visited Cornell to advise the planning of the project. Some of the local thinking also came from the influence of John Roberts, whose analysis of power styles probably helped to direct our interest in the analysis of <u>strategies</u> children use to handle <u>aggression dilemmas</u>, and also to study the potential function of such strategies.

Let us introduce our analysis of aggression by merely stating the categories of causal influence which are potentially recognized though not given any a priori weight because theory has not been developed to that refined extent. We recognize (but do not index) the potential influence, particularly in the realm of aggression, of in-built capacities for such action. We certainly recognize the influence of family structure and family practices in reacting to children and attempting to train them as having an influence, though not always the influence intended by the parental actors. Certainly the instigations received by the child both in a particular setting and as a potentially cumulating effect over time, should be considered. The strategies that children bring to bear on such instigations should also be considered and these can be viewed as complex dispositions or as repeating events tied to settings (simpler habits). Therefore, settings in their great variety may have considerable influence on the expression of aggression or in its actual creation. The feedback (or as we will call this, the effect acts) received by children when they have engaged in aggression or other actions are also important. The cultural setting as well as the age and possibly the sex of the child are considerations. Further, as our colleagues at Harvard have discovered, it is quite possible that such structural variables as the complexity of the culture or the differences in the learning environments that exist within a culture may have influence. Finally, in a good many of these classes of cause, there may be effects of vicarious processes which lead a child to act like important models around him or her.

We will not at this point attempt to summarize the success in the sampling of settings or in laying out the 15 different dimensions along which settings have been analyzed for their influence on aggressive action. This will be brought up when necessary, but the reader is referred to the forthcoming volume mentioned above, Children of Six-Cultures: A Psycho-

Cultural Analysis for a complete description of settings, of sample size, order of birth and other considerations of the sample. Certainly all elements of the design were not completely fulfilled and all analyses should be interpreted with vigilance. We are sure that we have not mounted a maximally advantageous exploration of these rich data, but it should be recalled that the explication of the idea of the maximally planned exploration is largely a development of behavioral science a good many years after we designed this otherwise fruitful study.

3. A Brief History of the Larger Project

The Study began when John Whiting, Irvin Child and W.W. Lambert (with much advice, good wishes and even money from others, including A.L. Baldwin, Robert Sears and the Ford Foundation's Behavioral Science Division) gathered the impressive group of "younger" people listed above who, while pursuing their own field research interests, agreed also to study some matters in common, and comparatively, which were of theoretical interest to all of us. The location of the field work, while guided by some general rules, was largely decided by the interests of the field workers, who ended up in the following very different, but at the same time internally homogeneous communities: a New England Baptist community referred to as Orchard Town, a North Indian caste group (Khalapur), a Philippine barrio in Northern Luzon (Tarong), an Okinawan village (Taira), an Indian village in Mexico (Juxtalahuaca), and a rural tribal group in Kenya (Nyansongo). The common data gathered was extensive, and the procedure used, the hypotheses originally entertained, and an informal evaluation of the techniques used were published in a separate volume (Whiting, et al., 1966). The first product of the project was a set of six socialization ethnographies which were published with a common index to facilitate comparative reading (B. Whiting, Ed., 1963) and these volumes were also aimed at alerting future ethnographers of enculturation and socialization to the kinds of interests we wished pursued, and also toward improving the quality of future reports on socialization.

a. On the origins of family rules on Socialization.

The second important product was a book, organized and mostly written by Leigh Minturn, Mothers of Six Cultures (1964) where we reduced the extensive data from the mother interviews and then tested hypotheses (or explored

inductive possibilities) which related the differences between the mothers in their reported rules and practices to the probable sources of these differences in the family, the community, and the cultural context.

The subtitle of this book described its aim quite neatly; we were in search of the antecedents of child rearing. We found it statistically advisable (based upon a factor analysis) to divide the rules and practices dealing with peers from those focussed upon parents. Having done so, we were then impressed with the plethora of mundane, every-day-decision types of factors which were important in predicting the severity of socialization rules for various systems of action, including aggression. The rules and reported practices seemed to emerge less from any over-arching theory of tendentious aims for personality formation, or from any acting out of deeply unconscious motives on the part of the parents, but more from the difficulties of making daily decisions in allocating the scarce resources of energy, attention and affection.

These decisions appear to be determined, at least in part, by the availability in the community or household of adults who could act as surrogates of the busy parents, by the number of children, or relatives' children, who were competing for the parents' energy and attention, and by the availability to the children of the community of targets upon whom to practice nurturance or aggressive habits. (See Lambert, W., and Weisbrod, R., 1972). One of the contextual sources of stern rules against peer aggression was the presence of blood relatives living nearby. The anthropologist Arthur Wolf has documented from the study of a seventh culture, a rural village in Formosa, the potential importance of such a factor. The rules against peer aggression are the strongest that we have ever heard of to date, so strong, in fact, that there has emerged an interesting pattern whereby the best way to retaliate to a bully is to make sure that his mother hears that he has been aggressive,

whereupon the mother will feel called upon to whip him publicly so as to assure the surrounding relatives that her intentions are in the right place! (Wolf, unpublished manuscript, 1965).

b. On the origins of differences in behavior proportions of children

There is a new, forthcoming book, by our Harvard colleagues, John and Beatrice Whiting (in collaboration with Richard Longabaugh) which continues the search in these data for the sources of differences between families and cultures. This newer book also goes an important step farther in analyzing the data of the study by including much of the time-sample of the observable behavior of each of the sample children. This permitted "the Harvard group" to explore the probably causal chain all the way from the cultural context of the cultural maintenance systems, through the resulting behavior of the children. The title of the new book highlights its major intention: Children of Six Cultures: A Psycho-Cultural Analysis, (In Press, 1974).

The Harvard strategy of analysis of these data has been a frankly wholistic one. They have applied a multi-dimensional scaling analysis (Shepherd-Kruskal) to all of the 'behavior proportions' observed for each child. First, a word about these behavior proportions. After the project's coders had categorized all of the acts of the children (we called these the central acts), statistical and theoretical considerations left us with 12 categories of actions which were combinations of basic verbs and adverbs from everyday useage which described the children's actions. These categories contained such listings as 'seeks help,' 'seeks attention,' seeks dominance,' 'suggests responsibility,' 'offers support,' 'offers help,' 'acts sociable,' and also contained three categories directly related to aggression: physical assaults, assaults sociably and insults or symbolic aggression. Our

definition of aggressive action has largely to do with behavior which hurt, or which usually would tend to hurt, the target. These 12 categories emerged after solitary play was taken out. They therefore represent the observed social or interactional behavior of each individual child in a timed sample of his life. The scales for each child can therefore be rendered either as a rate per five minute observation protocol or as a proportion which a given category represents of the total social behavior of the child. The Harvard group focussed upon the second of these, the 12 proportions scores, since (as Longabaugh has shown several years ago) the use of proportional scores collapses the space needed to describe our data from three dimensions (which look like those of Leary (1957)) to two dimensions (which look like those of carter (1954)), since the activity level of the child is no longer an orthogonal dimension. This treatment of level of activity aids in getting rid of a possibly spurious cultural difference in rate of action which may be reflective as much of field team differences as of cultural differences. It does, however, also dispense with some possibly important information, since Longabaugh also pointed out (1966, p. 454) that children differ from one another more in terms of how much they interact than in any other way.

c. Two dimensions of psycho-cultural differences

The first of the two interpretable dimensions which the Harvard group found with the Shepherd-Kruskal analysis has to do with a bipolar dimension, with nurturant behavior at one end and egoistic or demanding behavior at the other. The second, and orthogonal, dimension is somewhat related to aggressiveness, since it is a dimension with hostility at one pole and intimacy at the other. Let me risk over-simplifying the major findings. It was found that the mean scores of the children on the first (egoistic dimension provides an

ordering of the cultures which generally suggests that egoistic behavior tends to flourish in the more complex cultures (like Khalapur and Orchard Town) whereas helping, nurturant behavior is found more predominantly in the behavior of the children from the simpler societies like Nyansongo, Juxtahuaca and Tarong.

The mean scores of the children on the second dimension order the societies differently, suggesting in this case that the socio-cultural context of importance is one of simplicity versus complexity of the family system of the society. In Orchard Town (whose children score high on intimacy and low on hostility), there is a strong emphasis in preferring the nuclear family. The Nyansongo and Khalapur cases, on the other hand, (where the children show little intimacy but much hostility) have a much more complex domestic structure related to the patrilineal extended family. The argument here rests upon the need for training the future heads of the 'corporate patrilineal extended families' to lack timidity in expressing hostility so as eventually to be able to exercise authority over their adult sons and their families. The independent nuclear family socieites, on the other hand, require much less authoritarian structures and intimate and casual relationships are the valued rules.

I think it is valuable to point out that, as compared to our earlier emphasis on hypotheses based upon general learning theory, the Harvard report will show a change of perspective which has come from trying to organize these data: there will be more emphasis placed upon the intrinsic reinforcements provided for various classes of acts (such as aggression) by the parents themselves. The parents continue to be important in the socialization picture, but more through their power to assign tasks to children (which in turn have their own built-in rewards) or in providing a model for identification and role imitation.

d. On the issue of levels of analysis

The Harvard group also comes to some tentative general decisions regarding the issue of levels of analysis: they suggest that the individual level is different from the cultural level, but that there is also a great deal of similarity in them. Let me digress just a moment about this issue of levels, because I believe that it is an issue which will come to grow more and more explicitly important in comparative studies.

There are really at least three levels, and possibly as many as seven, involved in the Six Culture data. Two of these are 'individual,' the first being the level which refelcts the differences between individuals within particular cultures, but summed across all cultures. Let us call this the 'summed within-culture covariance' to distinguish it from the 'individual' level which occurs when, for example, we place all 134 of the sample children of the Six Culture Study on one and the same correlation surface, regardless of culture and age and sex. Let us call this the 'pan-cultural individual level.' It reflects the total covariance in the data. In the remarks that follow I will be talking about the first of these levels unless I say otherwise.

The issue of levels is both a problem, and a promise. If one works only at one level, then there is no problem of interpretation, but there is danger of a fallacy of inference. Those who work at the cultural level (or really any aggregative level) are prone to the famous 'ecological fallacy,' wherein they expect that the correlation found between cultures to implacably carry itself down to explain differences at the individual level. To oversimplify an example: suppose we found that in those societies where, on the average, people received more frustrations, the people showed the most aggressions: is there not an easy tendency to infer that this would work for individuals within the societies concerned? We are forgetting that it is quite possible

for most of the aggression to be done by a group of overlords to keep in line the other people, who in turn engage in no aggressions, and that the cultural level of aggression is correlated with average frustrations for some totally different reason.

Those who work with only the level of individual differences, either achieved by experimental manipulations or by correlations, similarly expect that their empirical laws will generalize to the levels of aggregates, committing the individual fallacy.

These and the several other possible fallacies have been well explicated by Hayward Alker (1965) and they have been elaborated by Prezworski and Teune (1970). These latter writers also develop a position on the issues which arise when, for example, a relationship can be discovered at the aggregate level but not at the individual level, or where the relationship goes in one direction at the aggregate level but the opposite direction at the individual level. Their bias is toward being skeptical of the aggregate relationship if it goes counter to the individual level. But this is just one position, and one to which our Durkheimian friends would certainly take exception.

My main point here is that in comparative studies like the Six Culture Study one has the opportunity to check findings at several levels and the logic is leading irrevocably toward requiring that several levels be checked before the spuriousness of findings at any one level can be ruled out. It's quite possible that this will force us away from our dogmatic inference slumbers at any one level and into a more active search for comparative designs.

4. Some Revealing Cross-Cultural Facts about Aggressive Action

The Six Cultural Study's design included an attempt at a random sample not only of the children of the six communities, but also of their most important daily activities. The aim was to get a timed sample of all the social activities in all the major settings that the child acted in outside his own home. A very careful and detailed record was kept regarding these settings and this made it possible to do a large analysis of the effect of changing the setting context on aggressive actions, by breaking the total rate and proportion of acts by fifteen facets of setting and with each of these fifteen cross-broken by one another.

Such a design provides us with a set of intrinsically interesting facts of the kinds which only field study can provide. Further, these summary facts provide a broader inductive base than usual for exploration or, where feasible, testing the many hypotheses that have been advanced regarding the effects of situation on aggressive behavior. I find that these facts have had an effect on my own general conception of aggression, so let me provide some examples while I also introduce some of the kinds of indices and categories we have used.

a. On the overall aggression socres by age, sex and culture

Let us start by lumping together our three most frequent acts of aggression (insulting, hitting and sociable hitting) into a total aggression score for each child. As far as rate is concerned, each child, on the average (and across age, sex, culture and situations) finds himself doing some aggressive act .75 times for each five minutes of observation: that is, this child emits one and a half aggressions per ten minutes, or nine every hour, or probably around 100 in a reasonably long day. Aggression is

therefore not a rate event in the behavior of these young people but rather occurs at a rate well within the sensitivity of our usual statistical procedures. Such rates vary greatly, of course, by the individual actor, his culture, his sex, the setting of the action, and also according to the general activity level of the child. But not with his age: younger children have a rate of .746; older ones, .763, and the difference is not at all significant statistically.

We have also computed indices of the proportion of all the social behavior of the child which is aggressive (out of the total of the twelve categories mentioned above). This number also strikes me as remarkably high: on the average something slightly over ten percent (.1031) of all of a child's observed social, out-of-doors action is aggressive. And this percentage is also remarkably stable across age: the younger children (on the average) display almost exactly the same percentage of aggression as do the older children. We shall return to this interesting fact in a moment.

I am also fascinated by the empirical fact that almost exactly half of all the aggressive actions we observed are instigated by some apparent immediately preceding social instigation from some other person. The other half of the occurrences are apparently internally instigated, since our observers and our coders found 'no immediately apparent instigation' in the behavior of others for this 50% of the occurrences. Since our observations were made in five-minute units, we are saying here only, of course, that in 50% of the aggressive events engaged in by our sample children there was no apparent instigation within that five minute time period. This means, in turn, that the percentage of all the observed actions of the children which are self-instigated aggression is, of course, about 5% and varies from culture to culture only from a low of 3.4% in the Orchard Town and Juxlahuaca groups to a high of about twice that, or 7.9% in the Taira, Okinawa, group.

b. On the purposive nature of aggressive actions

Before we probe further into the situational context for the occurrence of aggressive actions, let us look at some of the interesting facts which arose from asking our coders to judge something about the purposive nature of the acts, using the total context of the verbatim observation protocol as a basis for inference. That is, we asked, was the act directed mainly or totally toward hurting the target (this we termed goal aggression), toward getting back at the target tendentiously (which we called instrumental retaliatory aggression) or was it instrumental to some other goal than hurting? We were also interested in whether the act was accidental, imitative, etc. Tables 4-1 and 4-2 present much of the basic data that resulted.

Considering all the cases of aggression by our sample children, only 3.25% were pure goal aggression and about 70% were predominantly instrumental to some goal other than hurting the target. If we include the instrumental retaliatory acts, then the last percentage rises to almost 82%.

Let me make clear at once, however, that this 3.25% figure is by no means the necessarily maximum estimate of sadistic action, since we would be the first to agree that an action can "contain" more than one intention and more than one effect. It might be safer to conclude (tentatively) that even young children tend mainly to do their aggressing when there is some reason other than mere hurting which provides a context for such action, perhaps even a cover for it. This high percentage of instrumental aggression (and low percentage of pure goal aggression) may, then, of course be largely a matter of strategic timing on the part of rather generally sadistic but canny children.

Some, interested in facilitating the study of sadistic action because they feel that it is the core problem of aggression, might be methodologically upset by this low percentage of 3.25 pure goal acts. In this case

Table 4-1

Purposive Nature of Aggressive Actions by Culture:
Instrumental vs. Goal Aggression:
Proportions of Total

	Physical Assaults	Misc. (Verbal)	Assaults Sociably	Total	Instrumental Retaliatory Percent	Total Instrumental plus Instrumental Retaliatory Percent
Taira						
% Goal	30.00	3.90	0.00	6.57		
% Instrumental	32.00	70.24	93.68	71.14	15.43	86.57
Tarong						
% Goal	20.00	1.13	0.00	1.95		
% Instrumental	40.00	75.34	90.51	78.02	9.04	87.06
Khalapur						
% Goal	22.22	1.92	0.00	5.43		
% Instrumental	19.44	56.73	79.54	54.89	19.56	74.45
Juxtlahuaca						
% Goal	6.67	1.04	0.00	2.07		
% Instrumental	31.11	73.96	90.38	68.39	9.32	77.71
Orchard Town						
% Goal	26.31	3.91	3.00	5.26		
% Instrumental	36.84	71.87	78.00	71.66	13.76	85.42
Nyansongo						
% Goal	0.00	0.00	0.00	0.00		
% Instrumental	39.39	72.32	91.49	67.64	11.03	78.67

Table 4-2

Purposive Nature of Aggressive Actions by Culture:
Instrumental vs. Goal Aggression:
Frequencies/Total

	Physical Assaults	Miscellaneous (Verbal)	Assaults Sociably	Total
Taira				
Goal	15/50	8/205	0/95	23/350
Instrumental	16/50	144/205	89/95	249/350
Tarong				
Goal	9/45	5/442	0/232	14/719
Instrumental	18/45	333/442	210/232	561/719
Khalapur				
Goal	8/36	2/104	0/44	10/184
Instrumental	7/36	59/104	35/44	101/184
Juxtlahuaca				
Goal	3/45	1/96	0/52	4/193
Instrumental	14/45	71/96	47/52	132/193
Orchard Town				
Goal	5/19	5/128	3/100	13/247
Instrumental	7/19	92/128	78/100	177/247
Nyansongo				
Goal	0/66	0/159	0/47	0/272
Instrumental	26/66	115/159	43/47	184/272

we should point out that if indeed a child, on the average, aggresses 100 times a day, then about three of these will be aimed solely at hurting the target. So the stuff of future murder and suicide (from this point of view) is in principle rather plenteous, even at an early age, probably particularly at an early age. I say 'in principle' because if 3% is a reliable number there are still mammoth practical problems in actually monitoring a child's behavior for twelve hours in hopes of picking up three relevant actions, though this is obviously more feasible than trying to observe occurrences of murder or suicide. But we did not so observe the sample children in our study, so there is no value in pursuing the issue of goal versus instrumental aggression at the individual level. Here we must stay, riskily, at one or more of the available aggregate levels.

But a bit more on this rich topic: it is clearly in the physical assaults that the preponderance of the 'pure hurting' intentions are found, as the Tables make clear. Cross-culturally, 15.32% of all physical assaults were judged by our raters to be pure "goal aggression" (33.7% are rated as instrumental). With verbal aggressions, however, only 1.85% were judged goal, with 71.78% instrumental, and with Sociable assaults, only a mere .52% (that is, one-half of one percent) are goal aggression and 99% were seen as instrumental! So this last category of aggressive acts has the lowest percentage of pure expressions of desire to hurt the others. We must be careful, however, since these acts may merely be the class which are most carefully camouflaged for some strategic purpose. Subtle correlational analyses will be required to decide about this possibility. But it is pleasant to report that as children become older the overall empirical proportion of goal aggressions falls from the 14% for younger children to 7.8% for older ones. It is also interesting that this action system, that of physical assaulting,

is the only one of the three which shows a statistically reliable general decrease as the children grow older. Somehow, assaulting, with its heavy load of sadism, does manage to become socialized to some degree. Some of the venom falls out of verbal aggressions, too, which make up the heavy preponderance of all hurting behavior, since the 'pure goal' percentage falls from 3.5% for younger children to 1.5% for the older ones. This decrease is not statistically reliable, however, the case of sociable assaulting is also interesting: in all our observations, only three cases of pure goal sociable assaulting occurred, and all of these were done by younger children in the Orchard Town, U.S., sample.

The overall percentages of goal as compared to instrumental aggression do not vary markedly by culture, except that no case at all of goal aggression was recorded for the Nyansongo, Kenya, case. They therefore anchor the low output of sadistic action: the high percentages occurred in the Taira, Khalapur and Orchard Town cases, the highest being Taira, Okinawa, with 6.57% goal aggression overall, with a particularly high percentage of physical assaults being so coded. The percentage of aggressive acts which were judged as instrumental varied relatively little by culture--from a high of 87% in the Philippine community to a low of 74% in the Khalapur, North India, group.

c. On what instigates aggressive actions:

Let us move on to fill out some more of the context of occurrence of the aggression of our sample children. It is informative to look to the events which immediately preceded the aggressive acts. A look at portions of Table 4-3 may clarify the discussion. Please recall that one-half of the time there was no apparent instigation. But what about the times when there was an apparent social instigation? Most frequently, the instigating act was a prior aggressive act, or instigation--a verbal insult, a sociable assault,

Table 4-3

Analysis of the Total Aggression by a Child to Others and by Others to Him.

Instigations by Some Class of Others	→	Central Act by Sample Children	→	Effect Act by Some Class of Others
Rate or Proportion of:		Rate or Proportion of Retaliation by:		Percentage (or rate or proportion) of discouragement of aggressive acts
O hits P		hitting		Percentage (or rate or proportion) of encouragement of aggressive acts
O insults P		insulting		Percentage (or rate or proportion) of ignorals of aggressive acts
O hits P sociably		hitting sociably		No effect action
O ignores P		non-aggression		
other instigations				
No apparent instigation	- - →	Self-instigated aggression		Percentage (or rate or proportion) of discouragement of aggressive acts
				Percentage (or rate or proportion) of encouragement of aggressive acts
				Percentage (or rate or proportion) of ignorals of aggressive acts
				No effect action
Non-aggressive instigations	→	"Sneaky" aggressions sent		
		Non-aggressive acts	- - →	"Sneaky" aggressions received

Example of rate = $\frac{\text{Number of aggressive acts}}{\text{Time}}$

Example of proportion = $\frac{\text{Number of aggressive acts}}{\text{Total social acts}}$

Retaliatory Proportion = $\frac{\text{Number of aggressively instigated aggressive acts}}{\text{Total aggressive instigations received}}$

or a plain unvarnished physical assault received from some other. But we must also add to this list at once the category of 'other ignores P,' since it also ranks high in frequency as an immediate antecedent. Indeed, the most interesting fact in this domain is that four classes of instigation turn out to be empirically "replaceable" in terms of frequency of occurrence as equal alternatives in "leading" our children to act aggressively. Let me repeat this for clarity because of its importance: there exist four most frequent classes of acts by others which have an equal effect in the frequency with which they provide the conditions for our children to either hit socially or insult or simply hit someone on the spot. These are: 0 hits P, 0 hits P socially, 0 insults P and 0 ignores P. The means and stigmas for these four are almost identical and they have almost no intercorrelation with one another. As a matter of fact, each of these four instigations emerged as orthogonal (principle components) factors in one large factor analysis we did, along with an activity level factor and a couple of general aggression expression factors, as will be reported below.

d. The retaliatory proportion:

The importance of this fact is that we can, on this basis, develop a meaningful score for each child on the proportion of all instigations which result in immediate retaliation, and these scores can then be related to the personality or the situational and other contexts of interpersonal action. We call this index the retaliatory proportion, though we recognize that the notion of retaliation, which is still largely unanalyzed and unexplicated for the human case, is much richer than our index.

As a matter of speculation (and digression) it would be interesting to know how many professional observers of aggression feel as I do that humans tend over the long term, toward retaliating for every time they are picked on? But it would require a long term study of huge detail to pin this down!

Regardless, our average child retaliates on the spot (on the average) about 29% of the times that he is 'picked on.' This is an intriguing number, and I have still not found experimental evidence in the partial punishment area, for example, which gives me sufficient principles on which to expect this number to be 29% rather than 60%, 70%, or even 10%. Of course, we can wobble around that 29% by adding other less frequent instigations or by putting other acts by P into what we term "immediate aggressive retaliation," but any such resultant number will raise questions that will remain to intrigue me.

It is more intriguing that although there are marked cultural differences in all the components that enter into this index, the index itself displays no statistically reliable cultural differences: the lowest mean retaliatory proportion occurs in our Mexican community sample, .225, whereas the highest occurs in the Orchard Town, USA, sample and is only .313! These and other relevant numbers are displayed in Table 4-4.

Table 4-4: Mean retaliatory proportion by culture: Retaliatory Proportion:

	Mean	S.D.	N in sample For this analysis
1. Taira, Okinawa	.295	.196	24
2. Tarong, Philippines	.290	.168	24
3. Khalapur, N. India	.303	.388	24
4. Juxteahuaca, Mexico	.225	.184	22
5. Orchard Town, New England	.313	.262	24
6. Nyansongo, Kenya	.308	.199	16

Sex differences do exist however: girls, on the average, retaliate on the spot one-fourth of the time; boys do so one-third of the time, and this difference is statistically reliable, cross-culturally.

There are great individual differences within each culture on this index, usually varying from 0% retaliation to 66%. But again, age effects are lacking. Young children (3 to 6 in our definition) retaliate at the same effective proportion as do older ones (7 to 10). There are, probably, differences in the pattern of effective aggressive instigators and in the ways of expressing aggression that occur with age, but the retaliatory proportion as a whole is serenely statistically constant across age and culture.

We have found another index revealing, one that we call the 'range of aggressive instigations.' This is merely the number of kinds of instigations (out of twenty-four possible ones) which lead a particular child to be aggressive, ranging from being hit to being helped. A child high on 'range' appears to have come to render functionally equivalent a wide number of instigating circumstances as calling for aggressive action on his part.

Before we unravel more facets of the context of aggressive action, let us summarize the individual level indices which we have discussed so far. We can study the rate of self-instigated aggression. We can also construct a number of proportions involving self-instigated cases: the proportion of self-instigated to total aggressive occurrences, or self-instigated aggression as a proportion of all the actions of the child, or of all his self-instigated actions, etc. We can do the same with his socially instigated-aggression. It, too, can be rendered as a rate or as a proportion of one total score or another. We can also render the child's on-the-spot retaliatory behavior as a rate per unit time (that is, the rate per protocol that the child finds himself retaliating on the spot), or, probably more meaningfully, a simple proportion of number of retaliations divided by the total times picked on (our retaliatory proportion as discussed above). Given sufficient data for

each individual we could (but we do not in the case of this study) construct retaliation proportions and rates for each kind of aggressive instigation.

Here let us record another problem of this study: the lack of raw data, strangely enough, becomes markedly evident as we move in to closer analysis and this is true in the realm of retaliation particularly! (Although I find myself aging even more rapidly by contemplating doing so, I am in fact looking forward to studying the retaliatory system with the data collected in Formosa by Arthur and Margery Wolf of Stanford, where we have forty instances where each child was observed being picked on by others.)

But these are not all of the potentially valuable indices which can be constructed for describing aggressive action in the Six Culture Study, and we will return to this topic to point out one of the possible exhaustive classifications which may at the same time relate to the various strategies of aggressive actions used by our children. This exhaustive classification is in fact adumbrated in the first four rows of Table 4-3

e. Measures of being picked on

Related to retaliatory proportion, but quite different in import, is the issue of how frequently a child is picked on by others. Here we are interested in evaluating the degree to which a child receives hurt from others, in general or in specific. We have therefore gone through all our 18,000 IBM cards to get counts of various kinds of hurting behavior received by a given child and from whom; and we have also constructed a measure of all the social behaviors of any kind which were received from others. From these we constructed rates of being picked on or hurt and proportions of all the behavior a child receives which is hurtful.

It is interesting that the mean rate and the mean proportion of being picked on are somewhat lower than the corresponding numbers for the rate

and proportion of aggression by the child himself. It may be that methodological problems of observation method make us miss some of the hurts which are ignored by our observed child, or it may be that human children tend to be multipliers of aggression in that they send more than they receive. We are trying to analyze further to see which of these ideas is more persuasive. The question of being a multiplier as compared to being a dampener of hurt (as compared, in turn, to merely being a reflector of hurt) is one that we will return to in a moment.

We are moving toward indices of how frequently the requests of our sample children are frustrated, but progress here has been more difficult. It seems to be easier to deal with palpable and observable hurting, although it is also obvious that the importance of 'being ignored' as an immediate antecedent to aggression is a token of the need for more subtle analytic categories. It will be of long-run theoretical interest, of course, to discover which sets of conditions--those of hurt or those of frustration--are more fruitful in ordering the data.

5. On the Structure of Aggressive Action

Both Longabaugh (1966) and Whiting and Whiting (forthcoming: Children of Six Cultures) have provided us with overall structural analyses of the observed behavior of the children in the Six Culture Study. Longabaugh analyzed the proportions from a principal component analysis. When he used the rates of various actions, three dimensions emerged, one being the rate of social action itself. Whiting and Whiting used proportions also, but did not rule out culture as Longabaugh did. Further, they used an interesting analysis procedure of Shepherd and Kreskal which is in the family of "multi-dimensional scaling" techniques.

Given these resources, our own analytic focus has been less wholistic, more specialized. We have focussed upon the aggression domain itself, and we have done principal component analyses, factor analyses and cannonical analyses.

Since this topic is a rich one which could lead us into deep depressions from our major forces in this report, we will only cursorily report some of this analysis. The cannonical work will be put aside since it is in process of being redone on a firmer conceptual basis and despite the fact that our findings to date are suggestive in regard to situational vs. trait arguments. We will also set aside for later fuller reporting the final factor analysis in our series, since its attendant analyses of variance and its correctional and even path analysis potentialities are too full of short coverage and actually represent in part an overlapping and alternative analysis to other analyses we are presenting here.

a. Two principal components analyses

Our focus in the principal components analysis was to gain some insight into the possible structure of aggressive action. To this end, we assembled a long (but not exhaustive) list of individual aggression scores for each child. We left culture "in" by not using standard scores in this first analysis, and we also left "in" age and sex, since our aim was partially to do analyses of variance and covariance with the resultant factor score estimates (not reported here).

Table 5-1 lists the variables which composed the matrix. Table 5-2 presents the results of the principal components analyses of these data: showing eight "factors" in the structure and with the variables relevant to each factor listed in order of the size of the factor loadings of each. We will recognize in the list of 27 variables all of these discussed above in section plus a good many more. Let us take up the definition of these as they bear on the results of the analysis--that is, let us focus our discussion on Table 5-2.

b. Interpretation of the principal components

The reader will note that we have tentatively interpreted the principal component by giving each a title. The first factor is the one which "explains" the most variance and which contains the largest number of highly loaded variables and we have called it an "aggressive output" or aggressive expression factor. The defining variable is the proportion of overall aggression--that is, the proportion of all the childs' social behavior which was aggressive. This is followed by the self-instigated aggression score and by the proportion of all behavior which were sociable assaults. There follow a series of moderately loaded variables which include the range measure we mentioned above, and the retaliatory proportion which was discussed also. Note that

Table 5-1

27 AGGRESSION VARIABLES

Child Identification
Culture (1-6)
Age (1=young, 2=old)
Sex (1=male, 2=female)

Rate of Social Assaults
Rate of Physical Assaults
Rate of Miscellaneous Assaults
"Total rate" (Longabaugh)
Prop. of social Assaults
Prop. of Physical Assaults
Prop. of Miscellaneous Aggression
Age Sex

Self-Instigated aggression
Range of Instigations
Rate of Overall Aggression
Prop. of Overall Aggression
"Picked-on" Score
Rate of Behavior
Retaliatory Proportion
Total Acts
Total Protocols

Prop. of Instigation #10 (sociable assaults)
Prop. of Instigation #11 (assaults)
Prop. of Instigation #12 (verbal aggression)
Prop. of Instigation #14 (ignoral)
Rate of Instigation #10
Rate of Instigation #11
Rate of Instigation #12
Rate of Instigation #14
Total Raw Instigations 10, 11, 12, 14: Frequency
Prop. of Instigations 10, 11, 12, 14
Rate of Instigations 10, 11, 12, 14

Table 5-2:

Factor Anaysis of the Aggression Domain
(Principal Components)

Factor 1: Aggressive Output (Expression):		**Loading:**
Variable 13	Proportion Overall Aggression	.892
Variable 10	Self-Instigated Aggression	.799
Variable 5	Proportion Sociable Assaults	.753
Variable 12	Rate Overall Aggression	.689
Variable 11	Range of Effective Instigations	.681
Variable 7	Proportion Miscel. (Verbal) Aggression	.677
Variable 1	Rate Sociable Assaults	.657
Variable 16	Retaliatory Proportion	.624
Variable 3	Rate Misc. (Verbal) Aggression	.548
Variable 9	Sex	.356
Variable 14	Picked-on Score	.337
Factor 2: General Activity Level:		
Variable 4	"Total Rate" (Longabaugh)	.938
Variable 15	Rate of Behavior	.900
Variable 17	Total Acts	.569
Variable 12	Rate of Overall Aggression	.540
Variable 3	Rate of Misc. (Verbal) Aggression	.537
Variable 29	Rate of Instigations 10, 11, 12, 14	.402
Variable 27	Total Raw Instigations (ditto, freq.)	.359
Variable 25	Rate Instigations 12	.329
Variable 1	Rate Sociable Assaults	.205
Factor 3: Instigations by Assault:		
Variable 20	Proportion Instigation 11 (Assault)	.914
Variable 24	Rate Instigation 11	.914
Variable 6	Proportion Physical Assault	.437
Variable 2	Rate of Physical Assault	.418
Factor 4: Instigations by Assaults Sociably:		
Variable 19	Proportion of Instigation 10 (Ass. Soc.)	.970
Variable 23	Rate of Instigation 10	.932
Variable 28	Prop. of Instigations 10, 11, 12, 14	.401
Variable 29	Rate of Instigations 10, 11, 12, 14	.353
Variable 14	"Picked-on" Score	.370
Variable 5	Proportion of Assaults Sociably	.310
Factor 5: Instigations by Verbal Aggression:		
Variable 21	Proportion of Instigation 12 (Verbal)	.933
Variable 25	Rate of Instigation 12	.889
Variable 28	Prop. of Instigations 10, 11, 12, 14	.723
Variable 29	Rate of Instigations 10, 11, 12, 14	.692
Variable 27	Total Raw Instig. 10, 11, 12, 14 (Freq.)	.546
Variable 14	"Picked-on" Score	.512
Variable 3	Rate of Misc. (Verbal) Aggression	.451
Variable 7	Proportion of Misc. (Verbal) Aggression	.398
Variable 12	Rate of Overall Aggression	(.229)

Table 5-2, Continued:

Factor 6: (Measurement Artifacts):

Variable 18	Total Protocols	.884
Variable 17	Total Acts	.745
Variable 8	Age (Years)	-.715
Variable 27	Total Raw Instigations 10, 11, 12, 14	.485

Factor 7: Instigations by Ignoral:

Variable 22	Proportion Instigation 14 (Ignores)	.952
Variable 26	Rate of Instigation 14	.910
Variable 28	Prop. of Instigations 10, 11, 12, 14	.384
Variable 27	Total Raw Instigs. 10, 11, 12, 14 (Freq.)	.376
Variable 29	Rate of Instigations 10, 11, 12, 14	.354

Factor 8: Assaulting Output (Expression):

Variable 2	Rate of Physical Assaults	.759
Variable 6	Proportion of Physical Assaults	.737
Variable 1	Rate of Sociable Assaults	-.458
Variable 5	Proportion of Sociable Assaults	-.405

scores reflecting both the output rates and the output proportions of aggressive action are loaded in this factor for all except the physical assaults component. No purely "instigation" measure appears here except a weak loading in the "picked-on" score, and it is also interesting to point out again that age effects are absent here. Sex effects, with higher scores for males are present, however. In fact it is interesting to point out that sex differences (the boys are more aggressively expressive than the girls) show up only on this factor, but not on any of the other factors, including the "instigation factors"--that is, boys and girls are not differentially picked on (so to speak), but they are very different in their aggressive expression.

Factor 1 was further analyzed on its own. That is, a focussed analysis was done which included only the indices with loadings above .30 on this factor. The results are of some immediate value and are displayed in Table 5-3. It appears that it is useful to recognize three factors. The first has to do with the degree to which a child engages in sociable assaulting. The third factor is most heavily loaded in the degree to which a child is verbally aggressive. The second factor is the one related quite distinctly to the child's tendency toward retaliation, and it also includes the only component tied up with sex--the boys, as we have noted before, are more prone to retaliate on the spot than the girls are. This second analysis, taken as a whole, accounts for 69% of the total variance in the twelve variables included.

This analysis gives us a basis for recognizing our retaliatory proportion scores as having some structural clarity if dealt with as an analytic variable as we will do below.

Let us briefly finish our discussion of the remaining factors by making a few points which are important to our major argument.

Table 5-3:

Factor Analysis of All Indices Loaded in Factor 1 of Principal Components Analysis

	Loadings:		
	Factor I:	Factor II:	Factor III:
Rate of Assaults Sociably	.92	.16	.18
Proportion of Assaults Sociably	.87	.27	.16
Rate of Overall Aggression	.61	.04	.68
"Picked-on" Score	.60	-.17	.36
Self-Instigated Aggression	.58	.27	.48
Proportion of Overall Aggression	.55	.30	.70
Misc. (Verbal) Aggression	.16	.25	.82
Rate of Misc. (Verbal) Aggression	.32	.02	.80
Range of Effective Instigations	.28	.13	.73
Age	.22	.29	-.31
Sex	.10	.79	.05
(Immediate) Retaliatory Proportion	.03	.79	.36

Note that factors 3, 4, 5, and 7 are all orthogonal components each of which is heavily loaded in a facet of what it means to be "picked on." That is, there is an orthogonal (independent) component for being "instigated" by assault, by sociable assault, by verbal aggression and by ignoral. This is further basis for considering these as interestingly alternative "environmental hazards" for our sample children and therefore as underlying the rationale for our "retaliatory proportion" itself.

Note should also be taken of factor 2, which reflects the general activity level of the children, which is worthy of separate analysis on its own right at a later time. Note that it includes variables that have particularly to do with rate measures, whereas factor 1 was defined by a proportion measure!

Finally we should note that factor 8 is a bi-polar factor which is defined by both the rate and the proportion of physical assaults--the one component of overall aggression which was missing in factor 1. In polar relation to this (note the moderate negative loadings) is sociable assaulting. This bipolarity is worthy of considerable later analysis in its own right, but this would be a digression in the present context.

The remaining factor, factor 6, is apparently a factor which reflects some measurement artifacts: more protocols were collected for younger children, but this was controlled when rates and proportion scores were devised.

These eight components account, in toto, for 93% of the total variance in the 27 variables included.

6. Overall Cultural "Success" in Socializing Aggression

We have already noted that if we take aggressive action as a total system, there is a sense in which it does not "socialize"--that is, older children emit about the same frequency and proportion of aggression that younger children do.

But socialization is a rich and many-faceted process and there are a number of ways of approaching it with the data from the Six-Culture Study. Perhaps the simplest way is to accept the notion of socialization assumed in the first sentence above and merely look to see which cultures, or which sex groups within these cultures "achieve" a reduction in the aggression directed toward various "targets" when children are "older" instead of being "younger."

A glance at Table 6-1 will make more concrete what we have done here. Whenever a sample child interacted with one of the kinds of targets (a younger sibling (ys), a younger non-sibling (yns), a same (age) or older sibling (sos) or a same (age) or older non-sibling) a count was made of all the acts sent toward that class of target. A count was also kept of aggressive acts (any of the three "basic" kinds--assaults, sociable assaults or verbal (miscellaneous) aggressions). A ratio of these was made and an average for all children so engaged results in our "mean proportion of aggression" toward the four kinds of targets. The actors were either male or female, of course, and they were classified as either younger actors (3-6 yrs.) or older children (7-10 yrs.). Since the numbers vary much it is best to either remain descriptive in our statistical procedures, or to engage in simple sign tests, which can receive a limited statistical treatment.

Table 6-1

Characterization of Cultures and sex groups by whether the mean proportions*** of aggression toward four classes of target is directionally lower for older children than for younger ones

BOYS					GIRLS			
Targets:				CULTURE	Targets:			
YS	YNS	SOS	SONS		YS	YNS	SOS	SONS
-	-	0	-	Taira (Okin.)	=(low)	-	-	-
-	+	-	+	Tarong (Ph.)	+	-	-	+
+	+	-	-	Khalapur (I)	-	-	-	+
-	+	**	-	Orchard Town (US)	-	-	-	+
-	+	-	-	Nyansongo (Kenya)	-	-	-	-

Definitions:

YS = younger sibling
YNS = younger non-sibling
SOS = same age or older sibling
SONS = same age or older non-sibling

- = older sample lower than younger
+ = older sample higher than younger
= = older and younger sample equal

**No sample child observed interacting with SOS.
***Total aggression toward target/total acts toward target. Actor included only if target was "available."

a. Socialization success with regard to various targets

1. Aggression toward siblings

An important human fact is possibly reflected in the fact (as displayed in Table 6-1) that the six cultures are generally successful in getting older children to decrease the proportion of aggression they send toward family members (5s and s0s). Viewing each age-sex group as a "case," then in 20 out of 23 relevant cases (one case is ruled out--boys in Orchard Town toward sos) --because no boy was recorded in one of the relevant groups). The older children aggress less toward these targets than the younger ones do. Twenty "successes" out of 23 cases is certainly statistically reliable (if the necessary assumptions about independence are made) (95% confidence limits are .664 to .972).

Success was equal in this respect for sex of actors: boys decreased 10 out of 11 times; girls in 10 out of 12 cases (with one increase and one that stayed the same).

It is interesting to also note that the success with regard to sos targets is complete (11 out of 11 relevant cases), but a bit less successful (only 9 out of 12 cases) with regard to younger sibling (ys) targets. We will return to this issue later when we look descriptively for evidence regarding displacement of aggression).

2. Aggression toward those outside the family

The six cultures have much less "success" in socializing aggression toward those outside the family (yns and sons): in fact in only 13 out of 24 relevant cases did the older children show a decrease in mean aggression proportion compared to the younger children, and this is, overall, significantly different from the success in getting decreases toward family members.

So, as children grow older it appears that they generally learn to "send" aggressive action outside the family but to decrease its occurrence toward family members. (The two-sided 95% confidence limits on 31 successes out of 47 are above .500 and below .736).

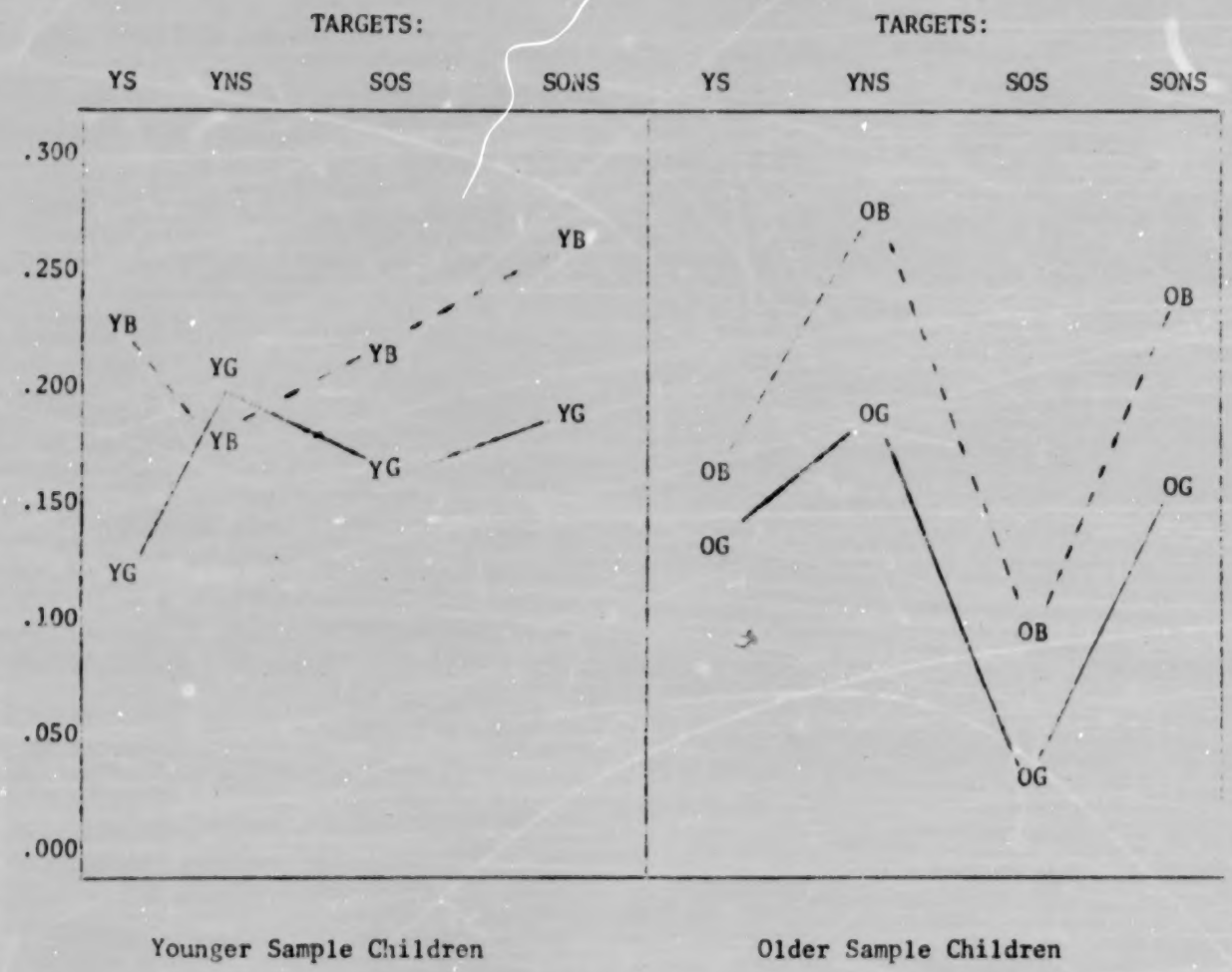
The success is higher for the girls in our samples: in 8 out of 11 cases, whereas it is only 5 out of 12 for the boys. This difference appears to focus on younger non-siblings rather than the SONS, since with the YNS boys increase 5 times out of 6 whereas girls decrease 4 times out of 5 (with one equal). (The two-sided 95% confidence limits for 9 out of 11 are nearly significant at .482 to .977). Both sexes are relatively poor in being socialized toward SONS, since only 7 out of 12 cases were aggressions toward these targets less among our older sample (and about equal for our boys and girls.)

Boys and girls are about equally well socialized toward targets of the older categories (OS and SONS), "succeeding" in 17 out of 22 cases in decreasing aggression in olders as compared to the youngers. A good many of the descriptive findings can be summarized in Figure 6-1 which, at the risk of oversimplification, lays out the mean proportions of aggression directed by older as compared to younger samples toward the four different targets. Sex differences are also displayed, and they suggest that younger girls are showing more of the "older" pattern than the younger boys are!

b. Overall success of cultures in socializing aggression

We can also look at the relative success of the six cultures in achieving a decrease in aggression as children "grow" older. Okinawa appears to "win" in this respect, since their age-sex cadres go down from young to old in all but one case (which is one where the two groups are equal) and in two of the cases (those where boys or girls have SOS as the target) the proportion of aggression actually goes to zero!

Figure 6-1: TARGET ANALYSIS: Mean proportions of aggression (all forms) directed toward four classes of targets (when they are available) by younger sample children compared to older sample children.



Younger Sample Children

Older Sample Children

(YG = young girl; YB = young boy; OG = old girl; OB = old boy)

Nyansongo (Kenya) group seems to success next best with seven decreases, one increase Orchard Town (New England) comes next with only two "failures," followed by Mexico and India (5 out of 8) and then the Phillipines with 4 out of 8.

Taira has overall the best success with boys, with 4 out of 4 decreases (followed by Nansongo with 3 and all the rest with two out of 4 except Orchard Town which also has one "empty" group. Nyansongo wins in decreasing the aggression of girls most (all 4, Okinawa is close with 3 and one tied comparison). Orchard Town, the Mexican group and Khalapur all get 3 out of 4 and the Philippines group "won" in two out of the 4 groups.

Four of the cultures do very well in decreasing aggression toward family targets, and the other two (Khalapur and Tarong are not far behind. But they are more spread out in their success in taming aggression directed toward targets outside the family: Taira (4); Nyansongo (3); Khalapur, Orchard Town (2), Tarong and Juxtlahuaca (1).

Perhaps we can discover some hints to this differential success when we analyze the differing strategies of control implied by the different patterns of "effect act" feed-back behavior which follow aggression in the different societies. This will be discussed below.

7. The Relation of the Setting of Action to Aggression and to Socialization

We have done a great deal of analysis of the relation of aggressive action to where, and in whose company, a child happens to be. Some of the basic data, descriptively rendered, can be perused in Tables 7-1 through 7-9. These tables present the basis for recognizing some overall cross-cultural trends in the effect of setting in action, but do not provide the basis for a culture-by-culture approach. All of these Tables present the mean aggressive proportion. This means that in each case the number of times a sample child assaulted, assaulted sociably or insulted in a particular setting was counted. The total of all acts by the child in that setting was counted, and the aggression count was made a proportion of the second. The average proportion for all children so observed was then calculated and presented in these Tables. The different settings are described at the top of each Table and also down the side. Let us remark on the content of the general trends of each Table, but no emphasize at this time the statistical status in a formal way.

a. Setting: the intimacy of the others who are present

Figure 7-1 breaks up the setting of action by the "intimacy" to the actor of the most intimate other present in the interaction. Where a "high intimate" person was present, this meant that at least one "chum" was present who was also present in many other times that the actor was observed in our protocols. Where the setting is called "low intimacy," the actor was present with people where the most intimate among them was rarely or never observed otherwise interacting with P.

This Table again demonstrates the lower overall proportions for girls as compared to boys: boys display higher means in all comparable

Table 7-1

Setting 2

Mean proportion of all aggressive social activity broken with regard to the degree of intimacy of the individual most intimate with the actor, who is present during the aggressive act.

N = Number of actors in feature setting
M = Mean proportion of aggressive activity

	Young Boy	Older Boy	Young Girl	Older Girl
high intimacy	N = 19 M = .222	N = 9 M = .162	N = 17 M = .190	N = 15 M = .121
medium intimacy	N = 23 M = .212	N = 21 M = .190	N = 23 M = .147	N = 16 M = .135
low intimacy	N = 27 M = .270	N = 30 M = .286	N = 28 M = .116	N = 28 M = .171

cases. The data in this Table are also related to the findings on socialization discussed in Section 6: the shifts from being young to being older are interesting, since the older children learn to stop aggressing so much when highly intimate people are around. This is particularly true for the girls, but holds for both sexes. It appears, though, that younger boys have already learned (like all the older children) to express most of the aggression in less intimate settings. This echoes the Section 6 findings that aggression "outside" the family increases as children grow older. Girls "must" (and do "learn" to express aggression less toward intimates and more toward those who are less well known. These trends need further analysis, however, and will receive it, because it raises the entire question of whether frequency of interaction is tied up with increasing or decreasing aggression directed toward the intimate others. Table 701 says nothing particularly about this, so it may reflect in-family vs. outside family trends rather than findings that bear on intimates as targets.

b. Play settings vs. others

Let us jump for a moment to Table 7-3 in order to point out a very important fact about play settings: note that taken overall, the proportion of aggression which occurs in play settings for older children is two and two-thirds greater as compared to casual social interaction settings. This difference is much less greater for younger children who show a charming tendency toward not being nearly as sensitive to settings differences (or to the rules inherent in situations) as older children become. Many of these Tables, in effect, show that settings differentiation tends to occur as children get older, even though the overall total of aggression does not decrease. Older children learn where it is "safe" and fun to be aggressive.

Table 7-3

Setting 4

Mean proportion of all aggressive social activity on form setting: play, casual social interaction, work, learning.

N = Number of actors in this feature setting
M = Mean proportion of aggression

	Younger N's		Older N's	
play	N = 68	M = .230	N = 64	M = .269
casual social interaction	N = 62	M = .191	N = 60	M = .102
work	N = 37	M = .126	N = 51	M = .081
learning	N = 21	M = .151	N = 41	M = .127

c. Settings with authority present or not present

generalization stated above is particularly clear in the interesting reversal that occurs with age in the proportion of aggression shown in the presence of an authority (i.e., somebody over 17 years of age in the setting) as compared to the absence of such an authority person. The data relevant are displayed in Table 7-8. Younger children apparently feel safer in aggressing when an authority is present; older children show less aggression when an authority is present and more when an authority is missing. The behavior of the young children is reminiscent of some of Ainsworth's findings regarding the need for an authority to be present to facilitate exploration, and, as Ainsworth has pointed out (1969) some of Harlow's reports (1961).

d. Aggression at home, away from home, and in public places

The older children learn to express aggression away from their own home, or in public places (see Table 7-2) whereas for the younger children these settings are hardly differentiated one from the other.

e. Children vs. no children and aggression

Aggression (see Table 7-4) tends to occur more where children other than the actor are present. In fact, the proportion of aggressive action decreases by at least a half whenever no other children are present! This generalization holds for both ages of our children.

f. The age of the other children present

Table 7-7 displays a further, but related trend: aggression peaks in proportion in settings where the others present are peers (or slightly older) of our sample children. It is when with one another that the hurting action is most prevalent. Adults certainly appear to dampen this form of "enthusiasm." Possibly some muting occurs in the final category (mostly

Table 7-8

Setting 11

Mean proportion of all aggressive social activity broken according to the presence or absence of an authority figure (over 17 years).

N = Number of actors
M = Mean proportion of aggression

	Younger N's		Older N's	
presence not ascertainable	N = 17	M = .261	N = 12	M = .149
authority figure present	N = 68	M = .220	N = 66	M = .163
authority figure absent	N = 68	M = .169	N = 64	M = .196

Table 7-2

Setting 3

Mean proportion of all aggressive social activity, public location vs. private location.

N = Number of actors in feature setting
M = Mean proportion of aggression

	Younger N's		Older N's	
public	N = 53	M = .206	N = 66	M = .172
private at P's house	N = 66	M = .174	N = 55	M = .150
private at P's courtyard	N = 24	M = .167	N = 12	M = .278
private away	N = 56	M = .175	N = 47	M = .203

Table 7-4

Setting 5

Mean proportion of all aggressive social activity broken with regard to number of other children present during act of aggression.

N = Number of actors in feature setting
M = Mean proportion of aggression

no others	N = 64	M = .094
small group of children	N = 133	M = .193
medium group of children	N = 130	M = .187
large group of children	N = 129	M = .205

Table 7-7

Setting 8

Mean proportion of all aggressive social activity, broken according to the age of all other children and adults present during aggressive act.

N = Number of actors in feature setting
M = Mean proportion of aggression

adults only	N = 57	M = .100
adults and infants only	N = 25	M = .068
mostly 7-10 year olds	N = 80	M = .233
mostly over 10	N = 61	M = .151

over 10 years) because of the presence of adolescents in such settings? This possibility will emerge in our later effect analyses.

g. Sex and size of the group of others

Table 7-6 displays the "apparent effects" of sex of others present. Again we should remind ourselves that this is not an analysis of targets per se., but more directly an analysis of "group atmosphere." The trends in the Table are, however, quite clear. It seems fair to say that the presence of the opposite sex usually tends to hold down the proportion of aggressive action, at least when a child actor (boy or girl) is alone with the other sex member(s). But it is quite intriguing that the highest mean proportion for any of the girls occurs when young girls are actors and they are in mixed sex "groups"--the proportion hops to .189, from means of .107 and .112 for the other two settings.

It is interesting to note that the size of group doesn't seem to have much consistent "effect" on the aggression of older children (a reverse of our general tendency toward differentiation with age), whereas the younger children seem to display more aggression the larger the group. It is as if social facilitation or anonymity seems to work for younger children, but not for older ones. This finding deserves further analysis.

h. Fathers and grandmothers and aggressive action

Finally, Table 7-9 displays interesting results having to do with fathers and grandmothers' presence on aggression. First, though, the Table again shows a lack of marked setting differentiation for the younger children, and a marked differentiation for the older ones. Further, it appears that for older children, the presence of father seems to mute

Table 7-6

Setting 7

Mean proportion of all aggressive social activity, broken with regard to sex of others present during aggressive act.

N = Number of actors in feature setting
M = Mean proportion of aggression

	Young Boy	Older Boy	Young Girl	Older Girl
all male	N = 31 M = .279	N = 31 M = .238	N = 25 M = .107	N = 20 M = .108
all female	N = 27 M = .165	N = 18 M = .200	N = 30 M = .112	N = 31 M = .145
both sexes	N = 34 M = .242	N = 33 M = .225	N = 34 M = .189	N = 33 M = .134

Table 7-5

Setting 6

Mean proportion of all aggressive social activity, broken with regard to the size of the group present during aggressive act.

N = Number of actors in feature setting
M = Mean proportion of aggression

	All Younger N's		All Older N's	
small	N = 66	M = .156	N = 61	M = .172
medium	N = 68	M = .181	N = 66	M = .188
large	N = 68	M = .221	N = 63	M = .157

Table 7-9

Setting 14

Mean proportion of all aggressive social activity broken according to the presence or absence of the following members of the immediate family during aggression: father, mother, grandmother.

N = Number of actors in feature setting
M = Mean proportion of aggression

	Younger N's		Older N's	
father only	N = 22	M = .152	N = 12	M = .046
mother and father only	N = 34	M = .150	N = 24	M = .104
all three (mother, father, grandmother)	N = 6	M = .138	N = 2	M = .100
grandmother only	N = 29	M = .169	N = 22	M = .229

aggression very markedly, whereas grandmother's presence seems to be a situation with marked output!

i. Unfinished tasks

We should note, though, that these findings may very well vary markedly by culture--we are reporting only overall trends here. Further, it is always sad that all children don't turn up in all our settings. It would certainly make our statistical lives simpler! But this very fact of setting occupancy by children is itself worthy of analysis, since it is quite possible that children may choose or avoid settings because they permit aggression as compared to not doing so! Unfortunately, the designer of the Six Culture Study did not call for actual sampling of each child's choice of setting. But such information would have been very valuable, and even what information we do have may be suggestive.

Let us now turn to a more integrative approach to our settings data, by placing it in a broader context of other data from the study, as we will do in the next section!

8. On Integrating Settings Effects with Other Data from the Study*

Settings appear, from our discussion so far, to have direct effects on the actions of our children, and behavior in settings also appear to reflect the increasing wisdom of children about the ways of the world as the children grow older. So far, so good. But it is also quite possible to integrate these data with other data, such as the interviews with the mothers of the children in the different cultures, ethmographic generalizations developed by the field anthropologists, etc. In order to do this usefully, we must build a complex network, or map, of the important variables. Then, since it is quite impossible with our finite data to test the adequacy of each strand in the network, we must devise a strategy for evaluation of our thinking.

The strategy we have chosen is to test the overall fit of our network to the rich (though limited) and uncontrolled data from the natural settings of our six cultures. No particular hypothesis or strand, therefore, can be tested by this strategy. But we can check on the way the ideas all work when put together and then held up to the light of our evidence. What follows, therefore, is an exercise in seeing how it all "comes together" to understand some of the differences in children's behavior in different settings and different cultures

The aim of this paper is to examine the effects of the social environment on one form of behavior, aggression. One overall goal is to demonstrate the importance of an understanding of the structure and dynamics of the social setting, of the context of behavior, as a key to understanding individual behavior. It is assumed that behavior is adaptive, adaptive to the demands

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*This section of the report is largely the work of Robert Cole and it is planned to publish this chapter separately with Cole as senior author.

of the social and physical environment. Individual differences will exist in the style of adaptation, but to understand and predict behavior, the demands and dynamics of the environment must be understood. More specifically, several characteristics of behavioral settings that have been helpful in explaining various patterns of aggression will be outlined.

a. Attachment, exploration, security and aggression: in search of hypotheses

One productive approach to this type of inquiry has been the approach developed by M.D.S. Ainsworth in her studies of attachment and the exploratory behavior of young children. Ainsworth's work outlines the effects on exploratory behavior of two environmental factors, security, or safety, and the control of behavior. Ainsworth (1960) observed that when one year old children were placed in a strange situation they used their mothers as a secure base from which to explore. They cried less and showed more locomotor, manipulatory and visual exploration when alone with their mothers, then when completely alone or alone with a stranger. The children understood, or at least acted as if they understood, that their mothers would protect them. This protection takes two forms. First, mothers, or parents, provide direct protection for their children, shielding them from the sometimes punishing consequences of their actions. Second, they provide indirect protection by not letting their children do anything that might lead to a punishing consequence. This second strategy has two effects. It both protects the child and limits his or her behavior. Provided that these limits are not too restrictive, the child can play and explore his environment feeling, perhaps without understanding, that if he approaches a dangerous threshold, he will be held back. This provides the child with the security necessary for exploration and experimentation. Without these limits, without this security, his activity would be more tentative. If he were frequently poked or stabbed,

he would undoubtedly lose his zest for exploration. In sum, a reading of Ainsworth suggests two important characteristics of the social setting of a child, the direct security provided by the protective adult, and the indirect security provided by the controlling adult.

This analysis suggests several things relevant to the study of behavior in general and of aggression in particular. First, the more secure the environment, given an appropriate level of novelty, the higher the rate of behavior. If the child is adaptive and if there is a high probability of a painful or punishing response to a wide range of activity, the child will act less and less over time. This is particularly true with respect to aggression. Aggression, by definition, involves inter-personal threat, and if any set of behaviors in an already threatening environment will meet with a potentially painful response, aggression is certainly one. Therefore, a low rate of aggression is expected in a threatening environment where little or no security is provided.

b. Hypotheses on the power of the other, strength of sanctions and aggression

Another element related to threat and security, is the willingness and ability of one's antagonists to be aggressive. If one's opponents refuse to be aggressive, or if they lack the necessary resources, the likelihood of aggression being provoked is small. The party without power is not likely to provoke the party with power. They should be available for compromise. Given this, the high power person should not need to resort to aggression, although it remains, for him a potentially useful tool.

This is not true if both parties have equal power. If both people are willing to aggress, the likelihood of aggression increases. Each party has the resources necessary for aggression, which from each individual's

point of view obscures the value of compromise. Also, as Goffman suggests, once provoked, neither party can back down without losing face. This is unlike the unbalanced situation, where retreating from a powerful opponent is acceptable. Therefore, when the relative power in a setting is unbalanced, aggression is less likely than when the power is balanced. This, however, should only be in the short run. Soon both parties should realize that their resources provide little actual benefit. They should eventually compromise. Deutsch (1960) found that players in the Acme Trucking Game with unequal power rapidly developed a cooperative and profitable interaction. When each player had equal power, however, the interactions were uncooperative and unprofitable. Deutsch, somewhat surprisingly, found that the equal-powered players did not become more cooperative, even over twenty trials. Gallo (1965) subsequently explored this situation, but made it more realistic by allowing the players to earn real money, up to sixteen dollars. He found that when playing with real money his players did cooperate, and their interactions were profitable. In an experimental situation at least, aggression is not only a function of relative power, but also of its potential benefit.

Two other setting components are the existence of strict, consistent controls and sanctions, and the availability of enforcement. With both of these elements present the frequency of aggression is expected to be low. When outside enforcement of sanctions is not available, the frequency of aggression becomes a function of the nature and degree of internalization of the control norms. If the norms against aggression are strict and inclusive and have been internalized, then aggression is less likely than if this is not true.

c. Internalized controls, moral development and aggression

The discussion of relative power portrayed aggression as a social tool to be utilized when profitable. But the consideration of internalized control alters that view and introduces the whole range of questions about morality and moral development. Although internalized sanctions are not setting specific and do not strictly qualify as setting effects, they can be profitably viewed as adaptive sets of rules distilled out of past experiences in a wide range of settings and therefore helpful in the present discussion.

While the understanding and application of certain moral principles must await the development of appropriate cognitive structures, a fact that provides Piaget and Kohlberg with an invariant sequence of developmental stages, what finally does develop is adaptive in one's social environment. While stages five and six must necessarily occur later than stages one and two, because of the necessary cognitive prerequisites, it would be surprising to find the philosophy of the later stages, of cooperation and individual principles of conscience among adults whose experience has been limited to one or two specific life roles, whose conception of the dynamics of society is limited to those aspects of society that directly effect those few life roles and who lives at a subsistence level in a competitive economy. What Kohlberg has called a philosophy of naive instrumental hedonism reflects a behavior that is just that, instrumental in providing for one's needs in a competitive economy.

Those individuals who have experienced a variety of roles, who have experienced a variety of viewpoints, who have had the responsibility of orchestrating the actions of men with diverse interests, and whose existence depends upon the cooperative efforts of a large number of individuals, are more likely to have a philosophy reflecting stages five ans six, a philosophy

based on democratically accepted law and free contract, on individual principles of conscience, and on cooperation and interdependence. The philosophies themselves are not more or less advanced, but are adaptive in certain situations and not adaptive in others. The philosophy of cooperation and interdependence might literally be dangerous in many areas of the large urban metropolis. Similarly, instrumental hedonism would not be adaptive in a rural community that must share scarce capital resources. It is expected then, that those people who have had the experience of many roles, who have had the experience of trying to reconcile the varied, yet valid viewpoints of these roles or who live in situations based on cooperation and interdependence would be particularly sensitive to the disruptive effects of aggression and its at best short term benefits. These conditions facilitate both the formulation and the internalization of norms against aggression, therefore the rate of aggression of these individuals should be less than individuals who have not shared these experiences or who do not live in this type of environment.

To summarize this section, where sanctions are strict and enforcement is available the rate of aggression should be low. When enforcement is unavailable, where the sanctions are not well defined or not consistently or strictly enforced, aggression is a function of internalized control. In addition, if the balance of power in a setting is skewed, the rate of aggression should be low due to the lack of instigation. The low power person will find it advantageous not to provoke the high power person, and the high power person will have no real need for aggression. If the relative power is balanced, the initial rate of aggression should be higher than if it is skewed, but should decrease if it proves ineffective for either of the parties.

d. The multiple effects of moderate control

The discussion of the multiple effects of moderate control on exploratory behavior also suggests several hypothesis relevant here. As outlined above,

strong restrictive control directed against aggression will undoubtedly limit aggression. But moderate control, less restrictive sanctions, or less than vigorous enforcement may increase the effective security without appreciably increasing the limits on behavior. This increase in security may make aggression a potentially more useful tool and may therefore increase its frequency. In addition less vigorous control and enforcement will affect everyone, but it may affect some more than others.

Aggression may become more useful to girls and young children if retaliation against them, by boys and older children respectively, is more severely and consistently punished than their instigation. Even between those of equal power, with less well defined sanctions both parties may feel that the existence of these loose sanctions will prevent a really punishing response, and this then becomes an acceptable risk, increasing the utility and therefore the probability of aggression.

Total absence of control, however, creates a situation so unpredictable and potentially threatening that it inhibits behavior, especially behavior with potentially painful consequences. In summary then, the frequency of aggression is expected to be the greatest when control is moderate.

e. Other variables as mediators: familiarity, age, experience, responsibility

Other variables, at other levels of analysis, mediate the effects of the variables discussed above. If an analysis of data collected in natural settings in a variety of cultures and among children of different ages is to be made, the effects of these additional variables must also be examined. The four variables to be considered are familiarity with a situation, age, experience and responsibility. Some of the effects of these last two variables have already been discussed.

Familiarity increases the predictability and therefore the security of a setting. If one is familiar with a situation, he or she should be able to anticipate what may happen in that situation. One should learn what actions in what circumstances will be punished and what actions will not. In other words one should learn when aggression is potentially useful and when it is not. School, for example is at first threatening, but after some experience most children learn what behavior is acceptable and what behavior is not. In sum, an increase in familiarity acts to increase security and may lead to higher rates of aggression.

Experience has several effects. First, a wide range of experience gives an individual familiarity with a wide range of settings. This not only increases the familiarity with these settings but it gives the individual'a better understanding of all social settings so that he or she is better able to anticipate and deal with any new or unexpected situation that may arise. Experience acts as familiarity, enhances self confidence and may increase the probability of aggression.

Experience also implies that an individual has been involved in a variety of situations and has played a variety of roles. As discussed above in the section on internalized sanctions this provides an individual with an understanding of the dynamics of conflict that facilitates the formulization and internalization of norms against aggression. In sum, experience simultaneously acts to increase both security and control and has a complex effect on aggression. The effects of these factors are outlined in diagram 1.

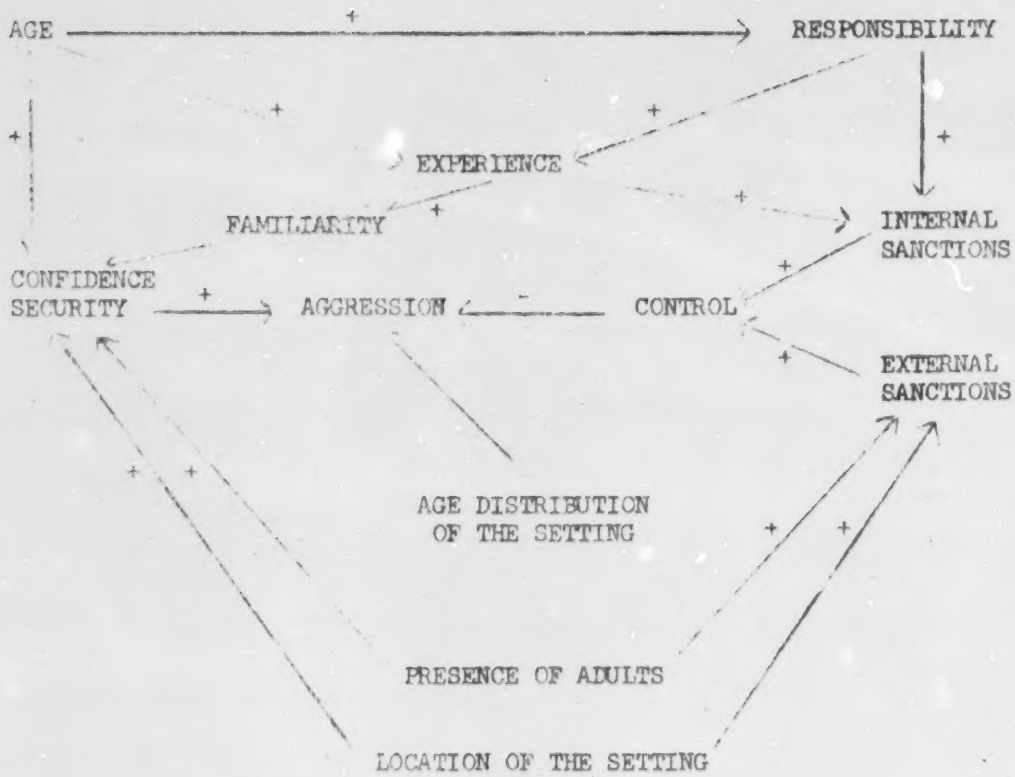
The exercise of responsibility, as discussed above, also facilitates the understanding of conflict and sensitizes one to the disruptive effects of aggression. Responsibility not only forces one to accept new roles, but forces an understanding of social dynamics at the system level. The responsible

person is often the task or socio-emotional leader in a setting, charged with making compromise and cooperation work and with directing the activities of others. For this person, the disruptive effects of aggression are important to avoid. Regular exercise of responsibility should decrease an individual's use of aggression.

DIAGRAM 1

The action of several factors
on the frequency of aggression

Individual Characteristics



Setting Characteristics

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Age is correlated with familiarity, experience and responsibility, especially among children. The older person will be more familiar with more settings, more experienced and more responsible. In addition, older children enjoy an improved ability to protect themselves and, therefore, increased security. Age is also related to the development of those cognitive structures (perhaps through the action of experience) which are necessary for the understanding and internalization of those norms associated with the higher levels of moral development. This is an important consideration for any study investigating aggression among children. Kohlberg's data, though restricted because it is based on a western cultural sample, suggests that at age seven approximately 96% of all children are still at the first two levels of development and by age ten only 40% of the children are beyond these levels. Not until age thirteen do any appreciable number of children reach the fifth and sixth stages. At this age 25% of the children are at stages one and two, 55% are at stages three and four, and 20% are at stages five and six. This suggests that the aggression inhibiting effects of experience and responsibility may not be evident until the children reach early adolescence. Perhaps our finding (reported above) that there is no overall change with age in our children's overall frequency or proportion of aggression is another way of describing this fact regarding moral development's slowness!

f. A test of this complex model

An attempt now will be made to understand the patterns of the frequencies of aggression occurring among children age three to ten in various settings in six different cultures. The rate of aggression has been defined as the number of aggressive acts, ranging from verbal insults to actual physical violence, in a five minute interval.

The available prior information, from Whiting (1963) and Minturn and Lambert (1964), permits a distribution of the six cultures into four of six possible categories based on assigned responsibility and the severity and consistency of the sanctions against aggression. This permits holding these two variables constant. There are three categories of sanction severity. In the first category, representative of Mexico, there is a strict set of consistent rules against aggression as well as vigorous parental enforcement. In the second category, representative of Africa, Okinawa, India and the Philippines, the rules are more flexible and enforcement is less strict. In the third category, representative of New England, some of the rules encourage some types of aggression, (e.g. retaliation).

There are two classifications of responsibility, labelled simply high and low. The measure of responsibility is based on an index reflecting the number and frequency of chores assigned to the children. The six categories are summarized in Table 8-1.

Table 1

Severity of the Sanctions Concerning Aggression

	Aggression Actively Discouraged	Aggression Discouraged	Retaliation Encouraged
High Responsibility	1. Mexico	3. Africa Philippines	5.
Low Responsibility	2.	4. Okinawa India	6. New England

The effects on aggression of the presence of an adult, both in general and for particular adults, the location of the setting and the ages of the other participants in the setting will be examined across all six cultures and within each culture. The effect of age will be held constant. Second, the

effects of responsibility and the sanction severity will be examined across the six cultures.

g. Our strategy for testing the theory

It is not possible, because of the complexity of the data collected in several settings across six cultures to reliably test the action of each of the variables outlined. Because of the action of so many effects in these natural settings the variances are necessarily large. The attempt to control for as many of these effects as possible frequently reduces the number of children in each setting to very small numbers. This makes significant differences in individual comparisons rare. Therefore the aim here is to test the overall usefulness of the model and not to certify the action of each link, which must await further research.

h. A test for age effects

The first variable to be considered is the age distribution of the children in the setting. The discussion of relative power suggested that if the children are all roughly the same age, that is share the same power, resources, and experience, the rate of aggression should be higher than if the distribution is skewed. If the distribution is skewed the rate should be lower if the index children are younger than most of the other children in the setting than if they are older than most of the other children in the setting. More specifically, the rates will decrease with increasing discrepancy between the ages of index children and the ages of the other children in the setting. If the discrepancy in two settings is equal, one when the index population is older, and one where it is younger, the rate of the index population should be higher in the former setting. The predicted and actual rankings of the settings as well as the actual rates of aggression in each setting are given in Table 8-2.

Table 8 - 2

The Rate of Aggression - Effect of Age Distribution

Culture	Distribution: Mostly 3	One Half 3-6	Mostly 3-6	Mostly 7-10	One Half 7-10	Mostly 10	Correlation with Prediction
Predicted Rank	3	2	1	4	5	6	
Younger (3-5)	6	5	3	1	2	4	
Older (7-10)							
Okinawa							
Younger	0 (.5)	2.000 (2)	.881(3)	2.200(1)	*0 (5.5)	.333(4)	.33
Older	*0 (5.5)	1.000 (2)	.479(4)	1.787(1)	*0 (5.5)	.833(3)	.50
Philippines							
Younger	.625(3)	*1.833 (1)	*.587(4)	.900(2)	*0 (5.5)	0 (5.5)	.60
Older	*0 (5.5)	6.000 (1)	2.361(3)	2.895(2)	0 (5.5)	.812 (4)	.29
India							
Younger	0	*0	.509(2)	.792(1)	*0	.333 (3)	.56
Older	*0	*0	1.042(2)	1.333(1)	*0	.125 (3)	.68
Mexico							
Younger	*.500(2)	1.000 (1)	.019(4)	.067(3)	*0 (5.5)	0(5.5)	.64
Older	0	0	1.194(1)	. 33(3)	*1.000 (2)	0	.72
New England							
Younger	*0	*0	*5.275	0	*0	*0	-
Older	*1.000(2)	*0	1.163(1)	.500(3)	*0	*0	-
Africa							
Younger	1.500(3)	2.500 (1)	2.225(2)	.333(5)	*1.000(4.5)	1.000(4.5)	.26
Older	1.500(2)	4.000 (1)	1.007(3)	.500(5)	*1.000(4)	.250(6)	-.54
Cross Culture							
Younger	.667(4)	1.47 (1)	.708(3)	.858(2)	.200(5)	.192(6)	.72
Older	.583(5)	2.20 (1)	1.12 (3)	1.541(2)	.333(6)	.651(4)	.20

*Contains 1 or no actors

The numbers in parentheses represent rank orders.

While none of the individual correlations are significant, all except one (New England excluded) are positive and most of them are large enough to suggest that the discussion of this variable was important and essentially correct. The probability of nine out of ten positive correlations occurring by chance is only .001. This is significant. Two problems presented themselves. First, the correlation strength required for significance of individual tests was quite high because of the limited number of settings. Other statistical comparisons were equally difficult because in 24 of the 72 settings there were no or only a single actor observed.

i. A test for the effects of adults on setting security and control

The effects of the presence of adults on the frequency of aggression can be examined in terms of each adults contribution to setting security and control. Not all adults are equally concerned with these two factors. The adult's concern and the net effect of an adults presence depends upon the security and control already present in the setting and the characteristics of the children. The older children are already relatively secure by virtue of their ability to protect themselves, their familiarity with various settings and their experience. In the absence of authority their rate of aggression should be relatively high compared with the younger children. Therefore, most adults will not be concerned with their security and protection, but with the control of their behavior. The presence of authority should decrease their rate of aggression. The younger children are not as secure as the older children because of their relative lack of these attributes. In the absence of authority their rate of aggression should be relatively low. Adults will be more concerned with their security and not with the control of their behavior, their rate of aggression already being low. The presence of an adult, with

its attendent increase in security, should increase the rate of aggression among the younger children. The data are presented in Table 8-3.

All except two of the twelve within culture changes in the rate of aggression due to the presence of an adult were as predicted. This is significant at the .05 level (P = .019). The significance of the individual shifts were not calculated because of the relatively larger variances and small n's.

j. The effects of the presence of others of importance on aggression

The effects of the presence of various members of one's immediate family, mother and father, and the effects of the presence of one's grandmother and teacher were examined next. Based upon the general stereotypic definitions of these roles, without respect to cultural differences, various generalizations can be made. In general the grandmother is assumed to be less concerned with control than with security. This is perhaps because she is not necessarily involved in the administration of the family. In her presence, and in the absence of other authority, aggression should be higher than if mother, father or teacher were around. At the other extreme, the teacher is very sensitive to the issue of control and to the disruptive effects of aggression in any setting in which she is present. While she is also concerned with the feelings of security of the children, her concern with control is the dominant effect. Aggression in the teacher's presence should be minimal. Between these two extremes are the effects of the mother and father. In general the mother's concerns should be balanced. While certainly concerned with control she is not expected to maintain the constant vigil the teacher maintains. The

Table 8-3

Rate of Aggression - The Effect of the Presence of Authority

Culture	None	Adult Present
Tavia		
Younger	.873	1.06
Older	1.130	.430
Tarong		
Younger	.975	1.15
Older	1.644	1.06
Khalapur		
Younger	.438	.345
Older	.423	.304
Juxtlahuaca		
Younger	.377	.528
Older	.686	.673
Orchard Town		
Younger	.144	.352
Older	.776	.317
Nyansongo		
Younger	1.453	1.06
Older	1.373	.963
Cross Culture		
Younger	.676	.751
Older	1.006	.584

father, in general, while concerned with both is expected to be more concerned with control. The data are presented in Table 8-4.

The rank order correlation coefficients between the predicted and the actual rankings across all six cultures are .6 among the older children and 1.0 among the younger. This is misleading, however, because within each of the six cultures there appears to be two distinct patterns, one as predicted and one exactly opposite in which aggression in the presence of the teacher is quite high and in the presence of the grandmother is quite low. While an understanding of this pattern must await a more complete analysis of these cultures, it is expected that in these cultures the teacher is denied the power for enforcement and the grandmother, possibly now a member of the child's immediate family, is very much concerned with control of aggression.

k. Testing for the effects of the location of the setting of action

The last variable in this set to be considered is the location of the setting. The settings have been classified into four groups, public settings, private settings at home, private settings near home (in one's courtyard), and private settings farther away than the courtyard. The private settings at and near home should be less threatening, more familiar and with easier access to help and comfort than the public settings and the private settings far away. The settings closer to home should also be subject to more rules and should permit more consistent enforcement. It is possible that an adult would impose strict regulations in public settings, but the present analysis will not include a consideration of the multiple effects of the presence of adults. Therefore the rate of aggression should be low at home where the

Table 8-4

Rate of Aggression - Effect of Individual Adults

	Grand-mother	Mother	Father	Teacher	Correlation with predicted Rank
Predicted Rank Order	1	2	3	4	
Tavia					
Younger	1.250(2)	1.650(1)	.667(4)	.900(3)	.6
Older	.200(3)	.417(1)	0	.250(2)	0
Tarong					
Younger	.605(3)	1.220(1)	.659(2)	.250(4)	.4
Older	2.705(1)	1.143(2)	0 4	.626(3)	.8
Khalapur					
Younger	.200(4)	.472(2)	.250(3)	1.167(1)	-.8
Older	.429(2)	.433(1)	0(4)	.083(3)	.6
Juxtlahuaca					
	.167(4)	.529(2)	.333(3)	.700(1)	-.8
	.667(2)	.857(1)	0(4)	1.125(1)	-.4
Orchard Town					
	.500(1)	.364(2)	0	.004(3)	.8
	0(3)	.083(1)	.500(1)	.333(2)	-.5
Jyansongo					
	1.000(1)	1.158(2)	.900(3)	0 (4)	1.0
	1.500(2)	.526(3)	2.000(1)	0 (4)	.8
Cross-Cultural					
Younger	.746(3)	.839(1)	.466(4)	.643(3)	.6
	1.207	.867	.942	.789	
	24	58	22	25	
Older	1.227(1)	.626(2)	.542(3)	.476(4)	1.0

The numbers in parentheses represent rank order.

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norms are strict and enforcement is consistent and in the public settings where there is little security. Among the older children, for whom setting security is not particularly important, the rate of aggression may be somewhat higher in public than at home. Among the younger children, for whom security is important, aggression may be higher at home than in public. For both groups the rate of aggression should be higher in the intermediate settings than at either home or in public. In only two societies is there meaningful data in the courtyard settings. In the other four cultures either no one participated in that setting or the participation rate was so low that no aggression occurred. Therefore data in this setting is given only for Africa and the Philippines. The data are given in Table 8-5.

Summed across all six cultures the rate of aggression among the younger children was higher in the home settings than in the public settings, but the rate in the intermediate settings was lower than both of these. Among the older children the rate did peak in these intermediate settings and the rate in the public settings was relatively higher than among the younger children, but not greater than the rate at home. The cross cultural summation may have obscured the actual pattern, however, for of the 36 within culture comparisons 25 were as predicted. This is significant at the .05 level (P = .014).

1. Testing for the effects of severity of sanctions on aggression

The second set of comparisons are between cultures and will examine the effects of the severity and consistency of sanctions and responsibility. Looking across Table 1 with the effects of responsibility held constant, it is expected that the rates of aggression in Africa and the Philippines will

Table 8-3

Rate of Aggression - Effect of Setting Location

Setting	Location			
	Public	Private At Home	Private In Courtyard	Private Farther Away
Tavia				
Younger	.894	1.389	-	1.023
Older	1.036	.333	-	1.605
Tarong				
Younger	.444	1.093	1.768	.467
Older	.444	.500	.250	.467
Khalapur				
Younger	.461	.500	-	.500
Older	.104	.250	-	1.250
Juxtlahuaca				
Younger	.737	.364	-	0
Older	.833	.611	-	.833
Orchard Town				
Younger	.333	.333	-	.333
Older	.400	.500	-	.400
Jyansongo				
Younger	1.250	1.250	1.429	1.000
Older	.200	1.583	.667	1.000
Total Sample				
Younger	.5084(3)	.910(2)	1.573(1)	.627 (4)
Older	.759(3.4)	.760(3.5)	2.417(1)	1.357 (2)

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be greater than the rates in Mexico where sanctions are rigid and strictly enforced. Also it is expected that the rates in Okinawa and India will be greater than the rates in New England where although some forms of aggression are encouraged it is expected that security is low. This should be true for both younger and older children. The data are presented in Table 8-6. Seven of the eight comparisons are as predicted. This is significant at the .05 level (P = .035).

Responsibility, as discussed, has two effects. It both facilitates the internalization of norms against aggression and it increases security and self confidence. While it is hoped, and predicted, that responsibility will eventually decrease the rate of aggression, because of the age of the sample and their lack of the cognitive prerequisites necessary for this process, responsibility will act only to increase familiarity, security and self confidence and therefore aggression. Thus the rates of aggression in Africa and the Philippines should be greater than the rates in Okinawa and India, consistency and severity of sanctions being held constant. The data are in Table 8-6. All eight comparisons are in the predicted direction. This is significant at the .01 level (P = .004).

m. Evaluation of the overall framework of hypotheses

It is felt that the overall framework has been helpful in understanding the complex data that is available. Although the significance of only some of the comparisons could be demonstrated, a great number and variety of comparisons were correctly predicted. This is encouraging in a cross cultural naturalistic observational study where so many uncontrolled variables can influence behavior, as evidenced by the large variances in the data.

Table 8-6

Severity of Sanctions Concerning Aggression

	Aggression Actively Discouraged	Aggression Discouraged	Retaliation Encouraged
Responsibility	Juxtlahuaca	Nyansongo	
	Younger .377*	Younger 1.453	
	Older .686	Older 1.373	
		Tarong	
		Younger .875	
		Older 1.644	
Responsibility		Tavia	Orchard Town
		Younger .873	Younger .144
		Older 1.130	Older .776
		Khalapur	
		Younger .438	
		Older .423	

te of aggression

The framework outlined has extended the concepts of security and control to help map and explain the effects of a wide range of variables including age, experience, familiarity, responsibility, the location and age distribution of the setting and the presence of adults on the frequency of aggression. Several things remain to be done.

n. Some tasks left unfinished

First, additional links between variables probably exist, and this should be investigated. For example, age and responsibility and familiarity with various settings affect the probability of adult presence as well as the location of the settings the children are allowed in. The older and more responsible children will be permitted to travel farther without an adult being present than the younger children. For the present analysis the effect was controlled, but data is available to investigate these equally important effects.

Second, the operation of the postulated mechanisms should be investigated directly. Does experience, via role playing, really facilitate the formulization and internalization of norms against aggression. Michael Chandler at the University of Rochester has demonstrated (to the best of my knowledge in an unpublished study) that role playing per se does stimulate moral development in Kohlberg's terms, but does this experience and do these norms really affect behavior?

Does responsibility increase one's investment in the established order and sensitize one to the disruptive effects of aggression? Is this also true among children even if it can be demonstrated among adults? This has been postulated as the mechanism underlying the overrepresentation of the lower and middle classes in the lower stages of Kohlberg's hierarchy. Perhaps, among adults at least, hard work without responsibility generates resentment,

and it may be this resentment that is being measured. In addition, people may in fact understand and want to believe in these democratic principles, but the lack of control over their own lives may literally force them to take what they can get.

If the hypotheses about the impact of responsibility and experience are correct, will they begin to limit aggression among older children who have developed the necessary cognitive structures? If this effect is demonstrated, is it due to the development of the cognitive structures or does it simply reflect the longer term effects of experience? New data would be needed to pursue these questions.

In addition to the age comparisons that were discussed, comparisons based on sex would also be valuable. Does the pattern among girls parallel the pattern among boys? Does a girl's ability to protect herself affect the likelihood of her aggression? Are girls assigned more responsibility than boys and how does a girl's breadth of experience compare to boy's? Do these factors differentially affect girls? For example, are girls' experiences more supportive and more nurturant than boys' and would this differentially affect moral development? Are these factors true in all societies? Data is available for the investigation of many of these questions.

o. Is the model more general?

Finally, is the operation of the model specific to aggression or is it related to the rate of behavior in general? More specifically, do age and those variables that affect security, limit those behaviors like aggression and exploration that are potentially dangerous, or do they affect all behavior?

It would be valuable to move beyond the model. Why, for example, in some cultures are children assigned more responsibility and allowed more

freedom than in other cultures? Are the settings in these societies less dangerous than the settings in the other societies, and if so is this because of the less aggressive social norms and more advanced moral development? If this type of circular network does exist, what antecedent variables can be identified? Do differences in economic interdependence as suggested help explain these intercultural differences?

After a constant barrage in the media of reports of aggression at all levels during the past decade, riots, homocides, war, it was somewhat of a surprise to find the rates of aggression in the New England sample consistently lower than in the samples of children in four of the other five cultures, even though some forms of aggression were encouraged by the adults present. It would be interesting to observe the rates of aggression among the still older children in New England and see if their rates continues increasing as they become more secure. Do these rates of face to face aggression indeed become greater than the rates in some of the other cultures?

It seems useful to view aggression as one available social tool. Its frequency is a function of its potential benefit and its availability. While these are partly determined by the characteristics of the actor, relative power and experience for example, they are also clearly a function of the setting.

Aggression is not simply learned. Examples can certainly help one refine one's skills and can certify the appropriateness of aggression in some settings, but as has been demonstrated in New England, reward or support of aggression will not necessarily further its use. In the one culture where aggression is most clearly rewarded, the rate of aggression is very low. Children must be secure, it seems, before aggression becomes an available tool.

Similarly, direct control of aggression is not always successful. As Brown and Elliot (1965) have demonstrated in a nursery school setting, aggression is an effective tool for getting attention whether it is rewarded or punished. The punishing teacher is attending to the child. In addition, moderate control seems to provide some measure of security, making aggression potentially more beneficial.

In the light of these considerations effective control of aggression may not depend upon punishment or direct control, but rather the realization that aggression in the long run is generally ineffective. Experience and responsibility facilitate the coming of this realization. Aggression will remain useful for some individuals in the short run, particularly those with long arms and short tempers. Even balancing resources only increases the concern for saving face. Hopefully by providing individuals with situations where they must take the viewpoint of others and where they are given a measure of responsibility, aggression will be seen as less useful.

9. An analysis of the targets of aggressive acts

We have made a number of forays into our data of the Six eveture Study in search of information about targets. In Section 6 of this report (above) we have used information regarding aggression toward some different classes of targets to find out about the success of socialization in this regard. We showed in that Section that as children grow older they display a markedly different pattern of target selection in expressing aggression: they learn to cut down on intra family aggression and increase the proportion toward those outside the family. Some further results will be reported in Section 10 of this report, and a good many will not be fully reported because matters become rather complex and space consuming. Some generalizations regarding behavior targets are also reported in the new book by the Whiteny's and Longabaugh which was described above.

In this present section of the report we recount some of the results from a rather extensive target analysis which is considered very much a foray--that is, it is an attempt to discover the size of the analysis task while at the same time hoping to discover some generalizations of value and to cover some obvious hypothesis-testing ground. The results are mixed, but are worthy of recounting here for methodological as well as substantial purposes.

In systematic analyses of the kind reported in this Section we see that the even over 1000 events of an aggressive sort (of all kinds, of course) are not adequate to the tasks when we attempt, as here, to look at target choice in the context of a larger number of relevant variables.

This section is largely the work of Dr. Paul Popper who helped to plan the analysis and who provided the draft reported here.

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Back at the office, for example, such a sequence would be: [illegible]. Both of these [illegible] the targets of the contact at [illegible]. Thus, we are not describing the entire interaction sequence. We will utilize some of the elements of that interaction, however, in our focus on the targets.

The methodological level of analysis employed here is the age-sex group of the participants in the [illegible] of culture. In other words, data are separated into the children into age and sex groupings and culture is ignored. [illegible] will consider culture as a variable, and we will then describe [illegible] the problems associated with this multi-level approach in the [illegible] variable.

[illegible]

a. Targets as dependent variables

The [illegible] mode of analysis employed was to use the age and sex of the targets as "dependent variables" varying with such factors as the [illegible] location (home, central data, and culture ("independent variables") [illegible] to discover relationships. This analysis was done by cross-tabulation [illegible] the targets were cross-classified simultaneously [illegible] variables at a time. Two-way tables were [illegible]. For example, targets were cross-classified [illegible] with the [illegible] (three types: adult, playful, and [illegible]). The [illegible] four types: young boys, old boys, young girls, old girls) and the culture [illegible]. This produces 3 x 4 x 6 = 72 unique [illegible], one of which, for example, would show who were the targets of young [illegible] when [illegible] in Old Town, Utah. There initially were

12 target age and sex classifications (see following) on each table. Thus, the 1422 aggressive acts suddenly appeared to be a rather small number, since the 422 acts would be distributed into 864 (72 x 12) unique cells, an average of slightly more than 2 acts per cell. Therefore, most of the following discussion will deal with the more aggregated data (e.g., rather than discussing three way classifications as per above, we will discuss one way or perhaps two way classifications). In sum, the type of analysis originally with the following representation: in setting S, culture C, and so forth, x% of the targets were in each of the various age and sex groupings.

The coding for the sex target factor was miscellaneous (animals, objects, males (M for boy), females (F for girl), and mixed (when both sexes were in a group). Acts of the latter were classified as miscellaneous or mixed.

The coding for the age target variable included younger than the actor (Y), the same age as the actor (S), older than the actor (O), and miscellaneous (animals, objects, or indefinite age, mixed groups). Note that relative age rather than absolute age was used. 15% of the total targets were coded as miscellaneous, and in some of the analyses that follow we use only those classified as Y or S. (This leaves 1082 acts from the original 1422 aggressive acts.)

b. Base rates for targets. (Table 9-1)

Considering all aggressive acts, 81 were targets M, 8% and 0% were targets F, M (see Table 2). If we ignore the miscellaneous classifications,

Table 9-1:

LIST AND EXPLANATION OF NOTATIONS USED IN

TABLES 9-2 thru 9-17.

Abbreviations used in tables:

Target Sex
- MS - miscellaneous
- B -- box, or male
- G - girl, or female
- MX - mixed, or both
- T - total

Target Age
- MS - miscellaneous
- Y - younger than P
- O - same age, or older than P

Tables

9-2 Target Base Rates
9-3 Targets of Instigating persons
9-4 Targets of Central Actor (P)
9-5 Targets of Central Aggressive Acts (For each P group)
9-6 Targets in Settings (For each P group)
9-7 Targets of Central Actor (P) For Self-instigated Acts
9-8 Targets of Central Aggressive Acts
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9-10 Targets in Settings
9-11 Cultural Variations: Acts returned to same class of instigator (For each P group)
9-12 Targets: Cultural Variations (For each P group: Self-instigated acts)
9-13 Reverse Analysis: Instigators of Targets
9-14 Reverse Analysis: Central Aggressive Acts at Targets
9-15 Reverse Analysis: Settings for Targets
9-16 Central Actors of Targets

Table 9-2

TARGET BASE RATES

Target Age[1]	Target Sex[1] M	F	G	MX	T
M	5.9	3.8	1.0	1.7	13.3
Y	0.1	24.9	16.1	0.0	42.6
O	0.0	21.6	22.5	0.0	44.1
T	6.0	50.8	42.4	1.7	

N = 1922

Cell entries are percentages of total aggressive acts in which that age-sex group was the target.

[1] See key preceding Table 1 for explanation of notation.

the percentages are 53.1 for Bs and 46.9 for Gs). With the large number of subjects, these represent statistically significant differences ($p < .01$). Similarly, Ys were targets 42.6% and Os 44.1% (or, ignoring the miscellaneous, 49.1 and 50.9). These figures will be used as base rates or as a general pattern against which other analyses might be compared. Specifically, where is there variation from this basic pattern? These variations and consistencies will be presented in the following sections.

It should be noted here that YBs (28.2%) are targets more than any other classification and YGs are targets less than any other (20.9%). (ignoring miscellaneous categories)

I. (c) Instigating person and the aggressive act.

The age and sex of the instigator is a very important predictor of which age and sex target will be selected for an aggressive act (see Table 3). For this analysis, the age-sex classifications of the instigator were YB, YG, OB, OG, none (hence, not instigated, but self-instigated by the central person), and miscellaneous. Considering all aggressive acts, if a YB is the instigator, the target will be YB 67.5% of the time. If a YG instigates, a YG is target 56.4%. Similarly, when OB and OG instigates, the target is the same classification: 81.1% and 81.8%. (If we ignore the miscellaneous classifications for target, the figures are 89.9, 57.6, 90.1, and 93.4, in the above order).

These targets are only for aggressive acts with known instigators. When the instigator is unknown (or, in other words, when the act is self-

Table 9-3

TARGETS OF INSTIGATING PERSONS

Target[1]	Instigator[1]					
	M (81)	F (1031)	YB (198)	YG (167)	OB (192)	OG (247)
YB	7.0	28.1	97.5	1.8	2.1	6.1
YG	2.5	16.9	0.0	96.4	1.0	3.6
OB	3.3	21.0	0.0	0.0	91.1	2.0
OG	6.2	21.0	1.0	0.6	2.6	81.8
MB/MG	12.3	8.2	0.0	1.2	2.6	4.5
MB/B	34.6	3.8	1.0	0.0	0.5	0.8
MB/G	14.8	2.1	0.0	0.0	0.0	0.8
MB/MX	12.3	1.9	0.5	0.0	0.0	0.4

Cell entries are percentages of aggressive acts in each instigating category for which that age-sex group was target.

[1] See key preceding Table 1 for explanation of notation.

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instigated: column F in Table 2) then the distribution of targets is essentially the same as for the overall base rate presented above. Since 53.6% of all aggressive acts in this study are self-instigated (these may well have been instigated by another, but the aggressive act was delayed beyond the observational time units), this self-instigation is an important area to examine more closely in order to discover other functional relationships.

In sum, if we know the instigator (i.e., if aggression occurs more or less immediately after instigation), aggression will be directed back at the same age-sex group as the instigator (indeed, it may be at the same person). If there is no instigator or the instigator is not known (e.g., if aggression is delayed after instigation) then the targets are not determinate, at least to this point.

We must note that this regularity holds in a wide number of contexts. That is, when the instigator is known, the target is also known, across all settings, for all central actors (F), in all cultures, and for all types of aggressive acts here classified. This is indeed a strong finding.

Thus, we have identified one important element of predictability. If we can identify the age-sex of the instigator, then we will likely know the target of the eventual aggressive act. This is still somewhat problematic, however. For example, when a young boy is the target of an aggression and we can identify an instigator for this act, it will almost invariably be a young boy. But, while the eventual targets can be linked to the instigation of a similar age-sex person, do instigations invariably lead to aggression back on this age-sex target?

The answer to this is no. There are more than 18,000 observed central

acts in the Six Culture Study, many of which have instigating acts. Yet only about 10% (1922) are aggressive central acts. Thus, many instigating acts are not met with a "return" to the same age-sex. Perhaps for every five instigations there is a "return" aggression. Perhaps for every 10. Or perhaps for every one.

Nevertheless, the consistency (about 90%) with which this occurs is an important link in identifying functional relations to the targets of aggression. We should note there are some differences in this relationship. The Y subjects almost invariably (96-97%) aggress against the same target classification. The O subjects, particularly OGs, are less likely to do so (81.8%).

Since more than half of the aggressive acts were <u>not</u> instigated, we proceed to analysis of other relations with targets. (Specifically, when YB are targets, 52.9% of those aggressive acts were not instigated, 50.0% for YG, 54.6% for OB, and 50.2% for OG).

II (d) Central actor (P) (Table 9-4)(Table 9-5)(Table 9-6)

The classification used for this analysis was the age-sex of the central actor P: YB, YG, OB, OG. Against what targets does P aggress? (See Table 4). Boys aggress against boys (56% for YB, 68% for OB) and girls aggress against girls (55% for YG, 60% for OG). The older children aggress against the younger (55% for OB, 53% for OG) and the younger aggress against the older (57% for YB, 50% for YG). Thus, there appear to be two simple rules summarizing these findings:

Table 9-4

TARGETS OF CENTRAL ACTOR (%)

		Target Sex[1]				
		MC	F	C	MX	T
F-YB (n=134) Target Age[1]	MC	8.0	1.6	2.6	7.1	19.7
	Y	0.0	20.0	7.7	0.0	27.7
	O	0.0	32.3	24.0	0.4	56.6
	T	8.0	55.8	34.3	1.5	
F-MB (n=156) Target Age[1]	MC	2.0	7.8	4.6	3.1	16.5
	Y	0.0	35.9	19.0	0.0	54.6
	O	0.0	25.0	6.0	0.0	31.1
	T	2.0	68.7	26.6	3.1	
F-YB (n=284) Target Age[1]	MC	7.2	0.9	0.6	2.7	10.9
	Y	0.0	18.0	21.1	0.0	39.3
	O	0.0	16.9	33.1	1.0	49.0
	T	7.2	35.8	54.8	3.7	
F-MB (n=376) Target Age[1]	MC	4.8	2.6	2.0	0.5	10.6
	Y	0.0	20.3	26.3	0.0	52.6
	O	0.0	7.4	24.4	0.0	36.8
	T	4.8	30.4	60.3	0.5	

Cell entries are percentages of aggressive acts committed by F for which that cell's age-sex group was target.

[1] See key preceding Table 1 for explanation of notation.

1) Targets of P's aggression tend to be the same sex as P.

2) Targets of P's aggression tend to be of "opposite" age of P.[1]

How do these rules hold up with addition of other variables? They are quite consistent. This pattern is independent of the type of aggressive act (social, physical, or verbal aggression: see Table 3) and holds irrespective of the setting in which the act occurs (see Table 4).

For some comparisons, the number of cases is too small for an adequate test of the consistency of these two rules. There are, however, no major contradictions of the pattern. There are a small number of qualifications. For sociable or playful aggression, YGs are as apt to aggress at Y as O targets (45.1% vs. 44.2%). (See Table 5) And in work settings (Table 6) there are small N, but it appears that both YG and OG aggress equally at Y and O targets (38.9 vs. 37.1 for YG and 45.7 vs. 50.9 for OG) and in learning settings, once again there are small N, but here all aggression is directed at OB (83 to 63%).

What about self-instigated acts? When we remove from this analysis the instigated acts (which go back at the same person, according to earlier discussion) and look only at self-instigated acts, the two rules - same sex, cross age - still obtain. (See Table 7). Hence, these findings

[1] Perhaps principle two is due to some artifact of classification. Young subjects are 3-6 years old and old subjects are 7-10 years old. A six year old target would be classified O (same or older) to a young child and as Y to an older child. Thus, if all aggressive acts were perpetrated on 6 years olds, the findings would be the O would be target for Y, and Y would be target for O. In short, if the actual age distribution of targets were identical for both the Y and O central P, the analysis would tend to show that relatively, Y agress against O and O against Y. The statistical demonstration of this is quite straightforward.

Table 9-5

TARGETS OF CENTRAL AGGRESSIVE ACTS
(For each P group)

		Target Sex[1]														
		Sociable Aggression					Physical Assaults					Verbal Insults				
P=YB		MS	B	G	MX	T	MS	B	G	MX	T	MS	B	G	MX	T
Target Age[1]	MS	5.2	0.0	1.5	0.7	7.4	20.2	3.2	5.3	0.0	28.7	6.2	5.2	2.3	1.6	15.3
	Y	0.0	26.0	6.7	0.0	32.7	0.0	22.3	7.4	0.0	29.7	0.0	16.7	8.2	0.0	24.9
	O	0.0	38.5	21.5	0.0	60.0	0.0	22.3	19.1	0.0	41.4	0.0	32.5	26.6	0.7	59.8
	T	5.2	64.5	29.7	0.7	(135)	20.2	47.8	31.8	0.0	(94)	6.2	54.4	37.1	2.3	(305)
P=OB																
Target Age[1]	MS	0.6	7.7	1.6	0.0	9.9	10.4	4.2	4.2	0.0	18.8	3.1	8.9	1.4	3.8	17.2
	Y	0.0	39.6	15.4	0.0	55.0	0.0	31.3	16.7	0.0	48.0	0.0	32.9	21.2	0.0	54.1
	O	0.0	34.1	1.1	0.0	35.2	0.0	22.9	10.4	0.0	33.3	0.0	20.5	8.2	0.0	28.7
	T	0.6	81.4	18.1	0.0	(182)	10.4	58.4	31.3	0.0	(48)	3.1	62.3	30.8	3.8	(292)
P=YG																
Target Age[1]	MS	6.2	0.0	1.8	2.7	10.7	8.0	0.0	0.0	0.0	8.0	7.4	0.3	0.3	3.4	11.4
	Y	0.0	21.2	23.9	0.0	45.1	0.0	14.7	20.0	0.0	34.7	0.3	17.6	20.3	0.0	38.2
	O	0.0	16.8	27.4	0.0	44.2	0.0	13.3	44.0	0.0	57.3	0.0	17.6	32.8	0.0	50.4
	T	6.2	38.0	53.1	2.7	(113)	8.0	27.7	64.0	0.0	(75)	7.7	35.5	53.4	3.4	(296)
P=OG																
Target Age[1]	MS	3.3	1.1	1.1	0.0	5.5	13.3	0.0	2.2	0.0	15.5	3.7	3.7	3.3	0.8	11.5
	Y	0.0	21.7	33.7	0.0	55.4	0.0	40.0	26.7	0.0	66.7	0.0	22.4	26.6	0.0	49.0
	O	0.0	5.4	33.4	0.0	38.8	0.0	4.4	13.3	0.0	17.7	0.0	8.7	30.7	0.0	39.4
	T	3.3	28.2	68.2	0.0	(92)	13.3	44.4	42.2	0.0	(45)	3.7	34.8	60.6	0.8	(241)

Cell entries are percentages of that type of aggressive act committed by P for which that cell's age-sex group was target.

[1] See key preceding Table 1 for explanation of notation.

Table 9-6

TARGETS IN SETTINGS
(For each P group)

P=YB		Play Settings					Casual Social Interaction Settings					Work Settings					Learning Settings				
		MS	B	G	MX	T	MS	B	G	MX	T	MS	B	G	MX	T	MS	B	G	MX	T
Target Age[1]	MS	7.0	2.1	3.2	1.6	14.8	9.1	9.1	0.0	0.0	18.2	23.5	0.0	0.0	0.0	23.5	0.0	0.0	12.5	0.0	12.5
	Y	0.0	19.5	8.7	0.0	28.2	0.0	22.3	5.0	0.0	27.3	0.0	29.4	11.7	0.0	41.1	0.0	6.2	0.0	0.0	6.2
	O	0.0	33.4	23.2	0.5	57.1	0.0	24.8	29.8	0.0	54.6	0.0	29.4	5.9	0.0	35.2	0.0	62.5	18.8	0.0	81.3
	T	7.0	55.0	35.1	2.1	(380)	9.1	56.2	34.8	0.0	(121)	23.5	58.8	17.6	0.0	(17)	0.0	68.7	31.3	0.0	(16)
P=OB																					
Target Age[1]	MS	2.4	8.9	1.3	1.3	13.9	4.3	3.3	1.1	4.3	13.0	3.3	10.0	0.0	6.7	20.0	7.7	0.0	15.4	0.0	23.1
	Y	0.0	36.3	19.7	0.0	56.0	0.0	37.0	18.5	0.0	55.4	0.0	26.7	20.0	0.0	46.7	0.0	23.1	0.0	0.0	23.1
	O	0.0	26.3	3.7	0.0	30.0	0.0	19.6	12.0	0.0	31.5	0.0	13.3	20.0	0.0	33.3	0.0	54.8	0.0	0.0	54.8
	T	2.4	71.5	24.7	1.3	(380)	4.3	60.0	31.5	4.3	(92)	3.3	50.0	40.0	6.7	(30)	7.7	76.9	15.4	0.0	(13)
P=YG																					
Target Age[1]	MS	5.2	0.0	0.7	4.1	10.0	4.5	0.6	0.6	0.6	6.4	24.1	0.0	0.0	0.0	24.1	33.3	0.0	0.0	33.3	66.6
	Y	0.4	17.1	24.2	0.0	41.7	0.0	22.9	13.4	0.0	36.3	0.0	9.3	29.6	0.0	38.9	0.0	0.0	0.0	0.0	0.0
	O	0.0	18.6	29.7	0.0	48.3	0.0	14.6	42.7	0.0	57.3	0.0	13.0	24.1	0.0	37.1	0.0	33.3	0.0	0.0	33.3
	T	5.6	35.7	54.6	4.1	(269)	4.5	38.2	56.7	0.6	(157)	24.1	22.3	53.7	0.0	(54)	33.3	33.3	0.0	33.3	(3)
P=OG																					
Target Age[1]	MS	4.7	3.8	3.4	0.8	12.7	10.1	0.0	0.0	0.0	10.1	0.0	0.0	3.4	0.0	3.4	0.0	7.1	0.0	0.0	7.1
	Y	0.0	22.9	29.7	0.0	52.6	0.0	34.8	30.4	0.0	65.2	0.0	22.0	23.7	0.0	45.7	0.0	7.1	14.3	0.0	21.4
	O	0.0	5.5	29.2	0.0	34.7	0.0	5.8	18.8	0.0	24.6	0.0	8.5	42.4	0.0	50.9	0.0	42.9	28.6	0.0	71.5
	T	4.7	32.2	62.3	0.8	(236)	10.1	40.6	49.2	0.0	(69)	0.0	30.5	69.5	0.0	(59)	0.0	57.1	42.9	0.0	(14)

Entries are percentages of aggressive acts in that setting committed by P for which that cell's age-sex group was target.

Table 9-7

[illegible]

		Target[1] sex				
		MC	F	O	MX	T
[illegible]	M	11.0	3.4	3.5	0.0	18.7
Target	Y	0.0	20.9	7.2	0.0	27.6
Age[1]	O	0.0	30.0	22.9	0.0	53.5
	T	11.0	54.8	32.6	0.0	
[illegible]	M	0.0	7.7	1.6	2.2	16.1
Target	Y	0.0	35.4	17.0	0.0	52.4
Age[1]	O	0.0	27.7	3.7	0.0	31.4
	T	4.6	70.8	22.5	2.2	
F-Y- (n=251)	M	0.0	0.4	1.2	3.6	14.8
Target	Y	0.4	17.1	22.3	0.0	39.8
Age[1]	O	0.0	15.1	30.5	0.0	45.4
	T	10.6	32.6	53.8	3.6	
F-O- (n=191)	M	5.7	3.1	3.1	1.0	12.9
Target	Y	0.0	23.0	25.6	0.0	48.6
Age[1]	O	0.0	7.8	30.4	0.0	38.2
	T	5.7	33.9	59.1	1.0	

Entires are percentages of self-instigated aggressive acts committed by [illegible] for which that cell's age-sex group was target.

[1] See key preceding Table 1 for explanation of notation.

are for P's acts when they are self-instigated.

It is important to note that these two rules are defined by two main effects, and not by one interaction effect. The only exception is OG, who are least likely to aggress against OB with other cells about equal (ignoring miscellaneous classifications, $\chi^2 = 8.1$, $p < .01$). The sex effect rule (target is of same sex as P) is usually stronger than the age effect. These functional rules hold as well for male as for female Ps. Thus, we have identified another consistency of target across a wide number of settings, acts, and instigations.

What about cultural variations? That is, within each of the six cultures do these two rules hold? The answer is a qualified no. We will return to this in the section on culture.

[1] Also, assuming that the aggressive acts were limited to targets of about the age range of the subjects (3-10), because of the inclusion of "same" age with the older classification, it is also the case that there should be a bias in terms of Y children aggressing more against O children than O children do against Y children. For example, note the following matrix where each

		Target Age			
	P	5	6	7	8
	5	25	25	25	25
a	6	25	25	25	25
g	7	25	25	25	25
e	8	25	25	25	25

children aggresses against each other age 25 times. Five year old children have no Y targets and 100 O targets (same or older age); six year olds have 25Y and 75 O targets; seven year olds, 50 Y and 50 O; eight year olds, 75 Y and 25 O. Since five and six year olds are young Ps, collectively their target totals are 25 Y and 175 O. Similarly, seven and eight year old Ps are old Ps, and their total targets are 125 Y and 75 O. Thus, not only are Y using O targets, and O using Y targets (with identical distributions of targets) but note that Ys hit Os more than vice versa.

However, on examining the actual data (see Table 4) these differences do not appear in the magnitude they might be expected. In fact, OGs use Y as targets somewhat more than YG use Os. This reduces the suspicion a bit. In fact the age effect is less strong than the sex effect.

This problem is unfortunately the result of early coding decisions which were made specifically to reduce the number of possible classifications (e.g., from three age groups to two), given that the 1900 plus aggressive acts actually is not too large.

With this caveat in mind, the statistical finding remains that relative to P, aggression is to "opposite" age targets.

III (e) Central act of P toward target

The central aggressive acts used here are sociable or playful hitting, physical assault, and verbal insults. For each act, there are no differences in the age of the targets (see Table 8). For playful aggressive acts, Bs are targets more often than Gs (58.2 vs. 37.5%) This is the only sex difference. For physical assults, YB and OG are targets (24.8% and 23.7%) rather than YG and OB (16.0 and 16.8%) ($X^2 = 7.9$, $p < .01$, ignoring miscellaneous classifications.)

Thus, there appears to be some regularity here, although it is not expressable into the convenient rules of previous sections. Age of target appears to be irrelevant when the nature of the aggressive act is taken into account. Sex of target makes a difference only for playful aggression. And there is the interaction effect for physical aggression.

If we additionally take into account P's age-sex with the central aggressive act, then we once again produce the regularities of section II (cross age, same sex: see Table 4). Similarly, to account for instigator's age-sex regularities returns us to section I. For self-instigated acts (see Table 8) the same central act pattern holds only for playful aggression: Bs are targets. There are no differences for the either verbal or physical aggression. In all settings for which there are enough cases a similar pattern holds. There are cultural differences, to be discussed below.

IV (f) Settings effects in target choice. (Table 9-10)

The settings used in this analysis were play, casual social interaction, work, and learning. In play settings, Bs are targets more than Gs (51.6 vs. 41.1%; see Table 10). In casual social interaction, YB and OG are

Table 9-8)

TARGETS OF CENTRAL AGGRESSIVE ACTS

		Target Sex[1]				
		MS	B	G	MX	T
Verbal Aggression (n=202)	MS	3.4	2.9	1.5	0.8	8.6
Target Age[1]	Y	0.0	28.9	18.2	0.0	47.1
	O	0.0	26.4	17.8	0.0	44.2
	T	3.4	58.2	37.5	0.8	
Physical Assaults (n=202)	MS	13.7	1.9	3.1	0.0	18.7
Target Age[1]	Y	0.0	20.8	16.0	0.0	40.8
	O	0.0	16.8	23.7	0.0	40.5
	T	13.7	43.5	42.8	0.0	
Verbal Threats (n=134)	MS	5.2	4.6	1.8	2.5	14.1
Target Age[1]	Y	0.1	22.3	18.6	0.0	41.0
	O	0.0	20.1	24.3	0.2	45.0
	T	5.3	47.0	44.7	2.7	

Entries are percentages of that type of aggressive act for which that cell's age-sex group was target.

[1] See key preceding Table 1 for explanation of notation.

Table 9-9

TARGETS OF CENTRAL ACTOR'S [illegible] ACTS
(Self-Instigated Only)

Sociable Aggression (n=375)	Target Age[1]	Target Sex[1]				
		MX	B	G	MX	T
	MC	0.3	2.0	1.6	1.1	5.4
	Y	0.0	23.2	40.5	0.0	86.8
	O	0.0	25.0	13.7	0.5	40.3
	T	0.3	47.2	30.8	1.1	
Physical Assaults (n=118)						
	MC	0.0	1.7	5.1	0.0	24.7
	Y	0.0	17.8	16.1	0.0	33.9
	O	0.0	16.1	20.3	0.0	36.4
	T	22.0	35.6	41.5	0.0	
Verbal Insults (n=530)						
	MC	7.8	5..	1.9	3.0	17.3
	Y	0.0	22.3	17.3	0.0	38.8
	O	0.0	20.6	22.9	0.0	43.4
	T	8.0	47.1	42.[illegible]	3.0	

Cell entries are percentages of that type of self-instigated aggressive act for which that cell's age-sex group was target.

[1] See key preceding Table 1 for explanation of notation.

Table 9-10

TARGETS IN SETTINGS

		Target Sex[1]				
		MS	B	G	MX	T
Play (n=1266)						
Target Age[1]	MS	5.1	4.0	2.1	1.9	13.1
	Y	0.1	24.7	19.2	0.0	44.0
	O	0.0	22.9	19.8	0.2	42.9
	T	5.2	51.6	41.1	2.1	
Casual social interaction (n=433)						
Target Age[1]	MS	5.6	3.4	0.5	1.1	11.6
	Y	0.4	27.6	14.8	0.8	42.4
	O	0.6	17.1	28.9	0.0	46.6
	T	6.6	48.1	44.2	1.1	
Work (n=188)						
Target Age[1]	MS	11.3	1.9	1.3	1.3	15.8
	Y	0.0	19.4	23.5	0.0	43.2
	O	0.0	13.1	28.1	0.0	41.2
	T	11.3	34.4	53.2	1.3	
Learning (n=46)						
Target Age[1]	MS	4.3	2.2	8.7	2.2	17.4
	Y	0.0	10.9	4.3	0.0	15.2
	O	0.0	52.2	15.2	0.0	67.4
	T	4.3	65.3	28.2	2.2	

[1] Entries are percentages of aggressive acts in that setting for which that cell's age-sex group was target.

[1] See key preceding Table 1 for explanation of notation.

targets (27.6 and 28.9 %) rather than OB and YG (17.1 and 14.8%). This is similar to the earlier relation with physical assaults, where YB and OG were targets. In work settings, Gs are targets more than Bs (53.2 vs. 34.4 %). In learning settings, Obs are targets (52.2%).

These targets do vary from culture to culture, but the addition of other variables does not alter the current relationships. However, in the case of work and learning settings, there are not enough cases to adequately test this.

V (g) Culture (Table 9-11)(Table 9-12)

To this point we have examined the relationship between the target and other factors by combining the data of all six cultures, and hence ignoring possible cultural variation. Are the patterns thus far described also found at the cultural level of analysis? That is, do the cultures differ in targets?

With respect to the regularity of target relating to instigating person: in each of the six cultures the target of P's central act is the same age-sex classification as of the instigating person (when the instigating person is known) (see Table 11). In many instances this return is 100%. In some cases the figures are small (e.g., 4/4 for YG in Khalapur). The lowest percentages are for OGs in Tarong (63/87 = 72.4%) and in Juxtlahuaca (9/17 = 52.9%).

Thus, for the instigating person, the findings within culture directly parallel those over all cultures. They are also subject to the limitations discussed earlier.

Table 9-11

CULTURAL VARIATIONS:
ACTS RETURNED TO SAME CLASS OF INSTIGATOR
(For each P group)

Culture	Instigator			
	YB	OB	YG	OG
Taira	34/34	30/31	21/21	29/34
Tiroa	65/70	52/58	77/77	63/87
Khalapur	13/13	23/27	4/4	27/29
Juxtahuaca	25/25	13/19	12/13	3/17
Orchard Town	11/11	23/29	16/18	45/48
Nyansongo	45/45	29/31	31/34	29/32

Entries show the number of times aggressive act is returned to same age-sex group as instigator / total number of times aggressive act is directed at someone after instigation.

The earlier rules for self-instigated acts was that P was likely to use a target of the same sex and opposite age. This finding receives only minimal support if we examine each culture separately. In fact, the findings are a bit complex and we will examine each of the cultures in some detail. There are regularities (that is, types of targets that are consistently chosen by each type of P) within each culture, but these patterns differ from culture to culture, and when combined yield a different pattern at that level. (The following discussion is based on cultural analysis of self-instigated acts: see Table 12).

1. Taira (Okinawa)

The children in Taira appear to use targets of the same sex. This is true for all age-sex groupings of P (from a high of 86.5% for OBs and a low of 51.4% for YBs). Age of target is not relevant, except for YBs (who have O targets 51.3% and Y targets 23.6%). In short, the patterns here appear to be largely sex-typed and rather easily describable.

2. Tarong (Philippines)

On initial inspection, Tarong also appears to be sex-typed in the same way Taira is. This, however, hides some of the subtleties in the data. In all cases, children aggress most against their own sex (smallest percentage difference is for YBs, 22.4% more against B than G, and largest percentage difference is for OGs, 60.0% more against G than B.), but these differences actually are due to statistical interaction effects. In short, targets for YB are YB and OG (36.4 and 30.8%) and in particular YGs are not used as targets (0.9%, X^2=37.3, p .00). OBs do not used OGs as targets (2.8%, X^2=8.6, p .01). YGs do not aggress against OBs (only 13.2%, n.s.). And even OGs, who appear to use sex of target as a relevant consideration, aggress the least against

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Table 9-12

TARGETS: CULTURAL VARIATIONS
(For each P group:
Self-instigated acts)
Central Actor

Taira		YR MS	YR B	YR G	YR MX	YR T	OB MS	OB B	OB G	OB MX	OB T	YG MS	YG B	YG G	YG MS	YG T	OG MS	OG B	OG G	OG MS	OG T
Target Age	MS	8.3	4.2	11.1	1.4	25.0	0.0	11.9	1.7	3.4	16.0	2.6	0.0	0.0	10.5	13.1	2.9	11.8	5.9	0.0	20.6
	Y	0.0	15.3	8.3	0.0	23.6	0.0	40.7	6.8	0.0	47.5	0.0	13.2	34.2	0.0	47.4	0.0	14.7	29.4	0.0	44.1
	O	0.0	31.9	19.4	0.0	51.3	0.0	33.9	1.7	0.0	35.6	0.0	10.5	28.9	0.0	39.4	0.0	11.8	23.6	0.0	35.3
	T	8.3	51.4	38.8	1.4	(72)	0.0	86.5	10.2	3.4	(59)	2.6	20.7	63.1	10.5	(38)	2.9	38.2	58.8	0.0	(34)
Tarong.																					
Target Age	MS	13.1	0.9	0.0	0.9	14.8	3.8	7.7	1.0	1.0	13.5	19.0	0.0	0.0	2.6	17.5	3.8	0.0	3.8	1.3	8.9
	Y	0.0	36.4	0.9	0.0	37.3	0.0	34.6	26.9	0.0	61.5	0.0	21.1	23.7	0.0	44.8	0.0	13.8	31.3	0.0	45.1
	O	0.0	15.8	30.8	0.0	47.6	0.0	22.1	2.8	0.0	24.9	0.0	13.2	24.6	0.0	37.8	0.0	3.8	42.5	0.0	46.3
	T	13.1	54.1	31.7	0.8	(107)	3.8	64.4	30.7	1.0	(104)	14.0	35.5	58.8	2.6	(114)	3.8	17.6	77.6	1.3	(80)
Khalapur																					
Target Age	MS	7.5	0.0	0.0	2.5	10.0	21.1	15.8	0.0	0.0	36.9	4.8	0.0	0.0	4.8	9.6	11.1	0.0	0.0	0.0	11.1
	Y	0.0	7.5	7.5	0.0	15.0	0.0	21.1	5.3	0.0	26.4	4.8	4.8	0.0	0.0	9.6	0.0	44.4	16.7	0.0	61.1
	O	0.0	37.5	37.5	0.0	75.0	0.0	21.1	10.8	0.0	45.9	0.0	42.4	38.1	0.0	81.0	0.0	22.2	5.5	0.0	38.5
	T	7.5	75.0	75.0	2.5	(40)	21.1	58.0	25.1	0.0	(19)	9.6	47.7	38.1	4.8	(21)	11.1	66.6	22.2	0.0	(18)

(see following page for continuation)

Table 9-12

(con't.)

Juxtlahuaca		MS	B	G	MX	T	MS	B	G	MX	T	MS	B	G	MS	T	MS	B	G	MS	T
Target Age[1]	MS	12.1	18.2	0.0	0.0	30.3	11.8	8.8	5.9	5.9	32.4	22.7	0.0	9.1	0.0	31.8	25.0	0.0	0.0	0.0	25.0
	Y	0.0	18.2	6.1	0.0	24.3	0.0	14.7	8.8	0.0	23.5	0.0	27.3	13.6	0.0	40.9	0.0	8.3	33.3	0.0	41.6
	O	0.0	33.3	12.1	0.0	45.4	0.0	44.1	0.0	0.0	44.1	0.0	0.0	27.3	0.0	27.3	0.0	8.3	25.0	0.0	33.3
	T	12.1	69.7	18.2	0.0	(33)	11.8	67.6	14.7	5.9	(34)	22.7	27.3	49.0	0.0	(22)	25.0	16.6	58.3	0.0	(12)
Orchard Town																					
Target Age[1]	MS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	3.2	6.4	7.4	0.0	0.0	0.0	7.4	0.0	16.7	8.3	8.3	33.3
	Y	0.0	0.0	28.6	0.0	28.6	0.0	45.2	9.7	0.0	54.9	0.0	11.1	7.4	0.0	18.5	0.0	8.3	8.3	0.0	16.6
	O	0.0	53.6	17.9	0.0	71.5	0.0	35.5	3.2	0.0	38.7	0.0	29.6	44.4	0.0	74.0	0.0	8.3	41.7	0.0	50.0
	T	0.0	53.6	46.5	0.0	(28)	0.0	80.7	16.1	3.2	(31)	7.4	40.7	51.8	0.0	(27)	0.0	33.3	58.3	8.3	(12)
Nyansongo																					
Target Age[1]	MS	28.2	2.6	0.0	0.0	30.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	3.4	5.7	0.0	0.0	0.0	5.7
	Y	0.0	15.4	7.7	0.0	23.1	0.0	54.2	29.2	0.0	83.4	0.0	13.8	37.0	0.0	50.8	0.0	51.4	17.1	0.0	68.5
	O	0.0	41.0	5.1	0.0	46.1	0.0	8.3	8.3	0.0	16.6	0.0	6.9	37.0	0.0	43.9	0.0	5.7	20.0	0.0	25.7
	T	28.2	58.0	12.8	0.0	(39)	0.0	62.5	37.5	0.0	(24)	0.0	20.7	74.0	3.4	(29)	5.7	57.1	37.1	0.0	(35)

OBs (3.8% of the time, $X^2 = 9.2$, $p < .01$). (Note: all these X^2 tests are done by ignoring all the miscellaneous classifications, and only focusing on the four age-sex classifications.)

Thus, Tarong appears to use rather complex rules in determining acceptable targets for children's aggression. Rather than specifying a simple rule (such as same sex targets) we would need to specify different rules for each age-sex classification in order to create a grammar of target choices for Tarong.

3. Khalapur (India).

One difficulty in determining functional rules for target choice in Khalapur is the small number of instances of aggressive acts. If we tried to characterize these relations here, however, it appears as though young children use age as a target choice consideration (percentage differences of 71.4 and 66.6 compared to 14.5 and 32.6 for the Old Ps), aggressing against the older children, and the older children use sex as a target classification (percentage differences of 45.0 and 32.9 compared to 9.6 and 0.0 for the young) aggressing against males. This is a pattern not previously encountered, but once again it does appear to be easily describable as was the case of Taira.

4. Juxtlahuaca (Mexico).

With Juxtlahuaca we also encounter some difficulties with small numbers of aggressive acts, particularly for OGs. YBs use the familiar same-sex and cross-age rules. However, both OBs and YGs use more complex variations. OBs often use OSn as targets ($F_{exact} = 5.63$, $p < .03$), and in particular never use OGs. YGs never use OBs as targets (F_{exact}, $p = .01$). OGs appear to use the same-sex rule, although there are only a small number of cases here.

The pattern in Juxtlahuaca should also be characterized as a complex one, since it utilizes a number of different rules dependent on the age-sex of P.

5. Orchard Town (United States).

Orchard Town represents another kind of complexity. There are a small number of cases here, once again, compounding the problem of description. The pattern appears to be this: OBs use sex of target rules (percentage difference is 64.6), aggressing against the same sex; OGs use an age of target rule (per centage difference is 55.5), aggressing against opposite age; and YBs and OGs exhibit statistical interaction effect. YBs never aggress against YBs but do quite often against OBs (Fisher's, p=.0004) OGs aggress against OGs.

Thus we have here a combination of simple rules used by some age-sex classifications, and more complex rules employed by others. The total picture is one of a complex set of rules.

6. Nyansongo (Kenya).

Nyansongo is moderately easy to describe, somewhat as Khalapur. The pattern, however, is just the opposite of Khalapur. In Nyansongo Y children use sex as a target choice (Bs against Bs, and Gs against Gs) and O children use age (both Bs and Gs aggressing against Ys). In Khalapur Y children used age and O children used sex. In any case we have encountered another novel pattern, but it is easily describable.

Summary of cultural variations.

1. No culture precisely parallels the combined culture rules of aggressing same-sex and opposite age. Some cultures employ one or another of these

rules. In short, descriptions of each culture are more complex than the total combined data, thus making our earlier rule statements a bit problematic. This again raises the issue of levels of analysis.

2. Throughout discussion of the six unique cultures, attempts were made to describe rules therein employed. Distinctions were made between two types of cultures: those whose rules were easily descriabable (that is, those rules comprised only of statistical main effects, such as using only age, or only sex, or both age and sex) and those whose rules were more complex (that is, those rules comprised of statistical interaction effects, such as the use jointly of age-sex as a target classification). Those cultures whose rules were more easily descriabable were Taira, Khalapur, and Nyansongo, and those whose rules were more complex were Tarong, Juxtlahuaca, and Orchard Town. Perhaps this rule complexity relates to other variables not utilized in the current analysis.[2]

[2] This classification of cultures was arrived at independently by a second method. For each classification of P (YB, YG, OB, OG) the following determinations were made in each culture:

1. Who does this P group use as targets most?
2. Who does this group use as targets least?
3. In what cultures does P aggress against the same age-sex as P, without instigation?

Simple frequencies rather than statistical tests were used. For questions one and two, cultures that differed from the most/least groups, were noted. For question three, cultures were noted in which P used the same age-sex group as P, since that was unusual.

By this method there were two groups of cultures. Group one displayed the patterns most often found in the other cultures. Group two was composed of cultures that were frequently noted as exceptions in the questions above. Group one was the above described "easy" cultures: Taira, Khalapur, and Nyansongo. Group two was comprised by the above described "complex" cultures: Tarong, Juxtlahuaca, and Orchard Town.

This classification requires the following cautionary notes. This easy vs. complex dinstinction refers to the ease with which the rules can be described. For the actual child in a culture which has any rule, the issue may be quite different. It may be just as simple to follow the rule, whether in an easily describable or a relatively complex culture. The distinction may make some sense, however, in the initial learning of the rules. In an easily describable culture, all children can be brought together, and (with one or two qualifiers) the rules can be taught simultaneously to all. (E.g., aggress only against opposite sex peers, or same sex, or ..., etc, depending on the rule.) For complex cultures, this learning would best take place separately. This is because of the necessity of many qualifiers for the rules and the uniqueness of the rules for each age-sex group (in many cases).

This classification is an interesting one. But we should ask on how solid a ground is the classification built? One major alternative interpretation is simply that there were coding differences in the cultures, and thus, different rules appear for that reason. Recall also that in some cultures there are only small Ns.

VI (h) "Reverse" Analysis. (Table 9-13)(Table 9-14)(Table 9-15)(Table 9-16)

An additional analysis was done on this data in an attempt to determine other regularities and differences. This analysis is entitled "reverse analysis" because of its departure from the earlier mode of analysis employed.

For example, we have been trying to identify the targets when we know the setting, culture, central act, and so forth. Now we are asking whether we can identify the setting, culture, and so on when we know the target. That is, for each target type, where are they victims, from whom, etc.

16

From Table 13 we can see that each target is most likely to receive an aggressive act either from someone's self-instigated act or from a similar age-sex person. This is not a fundamentally new revelation.

If we look at central acts (see Table 14) we can more easily note the nature of the problem with this type of analysis. Most aggressive acts are verbal insults, second most frequent are sociable aggressions, and lastly is physical assaults. Each age-sex target group also is a target most for verbal, then playful, and lastly physical aggression. In short, knowing the target produces no additional information beyond the marginal totals of the data. This is particularly true here for central aggressive acts and for settings (see Table 15) since the central acts and settings have quite different frequences for the various categories (for settings, play is by for the largest category, nearly 66% of the acts being observed there). A similar problem is encountered in analysis of culture, where the number of recorded aggressive acts differs greatly from one to another.

Only in the case of the central actor's age-sex are the marginals nearly equal. And here (see Table 16) once again we discover the targets are

Table 9-13

REVERSE ANALYSIS: INSTIGATORS OF TARGETS

Target[1]	n	MS	MF	YB	YG	OB	OG
		Instigator[1]					
YB	(469)	1.3	52.9	41.1	0.6	0.9	3.2
YG	(348)	0.6	50.0	0.0	86.3	0.6	2.6
OB	(414)	1.9	44.6	0.0	0.0	92.3	1.2
OG	(432)	1.2	50.2	0.5	0.2	1.2	96.8
MS/MS	(113)	8.8	75.2	0.0	1.8	0.9	9.7
MS/B	(72)	38.9	58.2	2.8	0.0	1.4	2.8
MS/G	(36)	33.3	61.1	0.0	0.0	0.0	5.6
MS/MX	(32)	31.3	62.5	3.1	0.0	0.0	3.1

Cell entries are percentages of aggressive acts directed at that target which were instigated by the respective instigating category.

1 See key preceding Table 1 for explanation of notation.

See also Table 2.

Table 9-14

REVERSE ANALYSIS: CENTRAL AGGRESSIVE ACTS AT TARGETS

Target[1]	n	Aggressive Act: Sociable Aggression	Physical Assaults	Verbal Insults
YS	(669)	32.2	13.9	53.9
YS	(398)	27.3	12.1	60.6
OS	(414)	33.3	10.6	56.0
OS	(432)	21.3	14.4	63.9
MS/MS	(113)	15.9	31.8	52.2
MS/E	(72)	20.8	6.9	72.2
MS/O	(36)	22.2	22.2	55.6
MS/MX	(32)	12.5	5.0	87.5

Cell entries are percentages of aggressive acts directed at that target which were of the respective aggressive act category.

[1] See key preceding Table 3 for explanation of notation.

Table 9-15

REVERSE ANALYSIS: SETTINGS FOR TARGETS

Target[1]	N	Play	Casual Social Interaction	Work	Learning
YB	(969)	66.5	25.8	6.6	1.1
YG	(348)	69.8	18.7	10.9	0.6
OB	(414)	70.3	18.1	5.1	5.8
OG	(432)	58.1	29.9	10.4	1.6
MS/MS	(133)	56.6	25.7	15.9	1.8
MS/E	(72)	70.8	20.8	4.2	1.4
MS/S	(36)	75.0	5.6	5.6	11.0
MS/MX	(32)	75.0	15.6	6.2	3.1

Entries are percentages of aggressive acts directed at that target which occurred in the respective setting.

[1] See key preceding Table 1e for explanation of notation.

aggressed against by same sex and opposite age actors.

In short, this mode of analysis does not appear particularly productive. Certainly it adds little to previous analyses.

VII (i) Summary.

The emphasis in this target analysis has been on predictability and consistency. The following represent the major findings:

1. When aggressive acts are instigated, the targets are in the same age-sex class as the instigator. This is true even when adding other contextual variables.

However, an instigating act is neither a necessary nor sufficient condition for an aggressive act to be returned to the same age-sex P. It is not necessary since many aggressive acts are self-instigated. It is not sufficient since many instigating acts precipitate non-aggressive outcomes (not here in analyzed).

Subject to these restrictions, there is a strong regularity based on the instigating person.

2. For self instigated acts, Ps aggress against same sex and opposite age peers. This is also true with the addition of other contextual variables.

The only major exception to this pattern is when culture is used as a classification variable. There are a myriad of patterns exhibited by the six cultures. An attempt was made to distinguish types of cultures in terms of the patterns of self-instigated act targets. The rules of easily described

Table 9-16

CENTRAL ACTORS OF TARGETS

Target[1]		Central Actor			
		YB	OB	YC	OG
YB	(466)	22.8	39.0	18.6	19.6
YR	(348)	11.8	28.2	29.3	30.7
OB	(414)	41.5	31.2	13.6	6.8
OR	(432)	21.6	7.2	37.0	25.7
MS/MS	(113)	30.9	13.3	31.0	15.9
MS/P	(72)	26.4	55.6	1.4	13.8
MS/G	(36)	38.9	22.2	8.3	27.8
MS/MX	(32)	18.8	34.4	40.6	6.3

Entries are percentages of aggressive acts directed at that target which came from the respective PC.

[1] See key preceding Table 1 for explanation of notation.

cultures (Taira, Khalapur, and Nyansongo) were characterized by statistical main effect rules (age, or sex), on the whole. The rules of complex cultures (Farong, Auxtlanuica, and Orchard Town) were characterized by statistical interactions rules (i.e., jointly using age-sex, or different rules for different groups).

3. Given these two basic patterns, there was a surprisingly small amount of alteration by the addition of other variables. There were some social setting differences and central aggressive act differences, but in the main, the setting and nature of the act produce little alteration in the basic rules.

What is the nature of the two major regularities? One is an interactional effect, and the other is a social status effect. The interactional effect refers to the instigation being returned to its source, and hence a two-part interaction. The social status effect refers to the fact that Ps, with no apparent instigation, usually aggress against a predictable class of targets.

There are certain limitations to the current analysis and discussion.

1. There has been no theoretical analysis which might help to better summarize and explain the data. Most theories of aggression do not deal directly with targets of aggression, although in some cases there is discussion of concepts such as displacement which bears on target analyses. An attempt of this sort might prove fruitful.

A related issue concerns why a particular person was used as a target. Is it simply greater availability of some groups for targets? Are sanctions explicitly prohibiting certain groups from being targets by P or explicitly encouraging the use of other targets? This type of information might well

explain some cultural variation.

2. The coffee analysis was a closed system one utilizing only a small number of variables. Additional information was available in the six culture study but was not utilized. This was an explicit decision to keep the project to manageable proportions. Simple relevant information may have aided the analysis, such as what types of persons are available and present in various settings.

3. Other early decisions also place certain constraints on this analysis. Targets are identified principally in age-sex terms. There are other classifications of targets that might provide additional insight, such as sibling vs. nonsibling.

Another related and important issue is the use of relative as opposed to specific ages. The use of specific ages (or even classes of age such as infant, toddler, child, etc.) might prove useful. And also the use of relative ages may well have introduced some element of statistical artifact, as discussed earlier.

4. In some of the analyses the number of subjects was quite small. Initially it was hoped that the cross-classification analysis would allow the simultaneous use of several variables (e.g., sociable aggression in learning situations in Orchard Town) but this became simply unworkable.

10. What Happens after a Child has Hurt Someone? The Analysis of Effect Acts

There are a great many useful explorations of the Six Culture data which are possible. (At times they seem endless, as a matter of fact!). One of the problems we have hardly touched has to do with sequences of action. On the assumption that there is some stochastic or other probablistic order to action and interaction (and this may be more problematic than we once thought when we note the clearly cyclical n wave-like quality to some behaviors studied by our colleague, Donald Hayes). Some very complicated analyses of certain "instigations" which lead to certain "central acts" which in turn issue into predictable "effect acts" can be laid out. For various technical reasons a fully sequential analysis of the Six Culture data has not been mounted and it probably will not be. Partial analyses will have to suffice, but they do appear to have value.

a. Introduction to instigations, central acts and effect acts

Michael Mann has done some smaller analyses of sequences. In a brilliant Cornell seminar report of a few years ago he reported a very preliminary study. One of his "findings" is worthy of recording by way of introduction. Given that a child has had (as an "instigation") his property taken away from him and that he has (in his "central act," assaulted the taker of the property on the spot, then it empirically followed that in no case did anyone (as an "effect act") intervene to punish or discourage the retaliating actor: in all cases there was "no effect" act recorded, or the assault was actively "ignored," or the other child "avoided," the attacker or was recorded as having "given up set."

This example can serve to introduce the fact that "instigations," "central acts" (always committed by one of the sample children) and "effect acts" were always recorded for all the social activity involving the sample children, even when "no instigation" or "no central act," or "no effect act" was the content so recorded. Instigations, of course, are usually provided by others (but p sometimes provided his own instigations) and the effect acts were almost always provided by someone other than p (but not, of course, always).

b. A focus upon central act--effect act sequences

If we rule out (for the present at least) a full sequential analysis, we can at least focus on the partial sequences which lead from central acts to effect acts. Let us begin with an orienting fact: a very high percentage of all aggressive acts are ignored. Sixty percent, to all effects and purposes! But there is another interesting fact: about 28% of all the effect acts which follow central act aggressions are what we classify as discouragements. This percentage is nicely symmetrical with the percentage of instigative aggressions (plus ignorals) which are immediately retaliated to. On the average, then, it appears that our children have about the same chance of being hurt back (or at least discouraged back) as they provide to others who pick on them!

This symmetry may suggest one of the sources of the average child's retaliatory proportion: he may absorb through an important but unstudied process of probability learning, the fitting probability of retaliation by vicarious learning through observation of the handling of others as well as himself in his neighborhood and his culture.

But let us pause and define some terms. It is useful to glance back at Table 4-3 on p. 21-a and note the placement of "effect acts" in that Table in the far right column. The various components of occurrences of these kinds will be found there, with a listing of one of the three-way categorizations

that we have used in trying to reduce effect acts into something approaching the systematic.

c. The agents of effect acts

The concept underlying this classification into discouragements, encouragements and ignorals was a reward idea. An effect act which was likely to be rewarding to P was classified as encouragement (e.g., gives approval or acts hurt). An effect act directed at P which was unlikely to reward P was classified as a discouragement (e.g., assaults; suggests; blocks.). This category also included all forms of punishment. Ignoring was defined as effect acts which were not directed at the actor (P). There were, of course, many cases where the coders merely reported that there existed "no effect act" following a central act by P, and these NA's can be considered irrelevant for analysis, or be considered as, in fact, additional ignorals. Table 10-1 lists the categorization of possible acts and Table 10-2 displays the total frequencies of occurrence of the acts which occurred if all six cultures are put together. We have also included information in Table 10-2 which tells who the agent of the effect act was, e.g., infant or young child or older child, adolescent or adult.

We should report at once that with use of this three-way code, the three "kinds" of aggressive act are "treated," overall, in a similar fashion, with about 50 to 60% ignorals, about 25-35% are discouraged and only 10-15% are encouraged.

d. Do some effect actors reward or discourage more than others do?

Possibly the most interesting data in this section is displayed in Figures 10-1, 10-2, and 10-3, which address themselves to the question above. Clearly it is the younger agents of effect, such as infants (children under

Table 10-1

Code for Effect Acts

Reward Concept

Encourage		Discourage		Ignore	
30	gives up set	8	reprimands	00	no effect
42	acts hurt	9	warns	33	hides
43	asks help	10	assaults	34	avoids
53	gives approval	11	insults	62	observes
63	shows pleasure	12	threatens	90	ignores
65	is sociable	13	threatens s	91	breaks interaction
51	gives emotional support	14	takes property	92	solitary play
50	gives help	17	reports deviations	93	practices skill
32	deprecates self	25	blocks		
7	teaches	21	arrogates self		
60	joins group	22	challenges to compete		
40	encounters difficulty	26	accepts challenge		
		20	suggests		
		46	seeks contact		

two years of age) and young children who tend to give encouraging feedback (Figure 10-1), with the help of "older children." Overall, for example, 52% of the feedback for aggression in Tarong provided by infants is encouraging! Infants are higher than any other agent in all the cultures in this regard, and by considerable margins. (We should quickly refer ourselves back to the coding scheme, of course, and point out that a good percentage of what infants do which is encouraging is to "act hurt.").

Figure 10-2 displays the clear fact that the feedback given by infants and young children is not of the "discouraging" sort (as we have classified the acts). Clearly, as the agent of effect becomes older, their reactions to aggression on the part of our sample children turns increasingly sour. This Figure dramatically points out, as little else in our data does, the fact that older actors appear to have internalized the negative attitude toward aggression more, and to have internalized a disposition to act in terms of such values with clearly sanctioning behavior! It is interesting to note that in four of the cultures, the adolescents are more prone (or at least equal) to discourage aggression than are adults! Figure 10-3 displays the clear fact that acolescents and/or adults tend to ignore less: they are the vigilant ones! But in this case the cultural differences assert themselves more clearly, also!

e. Where do most of the encouragements and discouragements come from?

It is interesting to turn the question around and discover where the encouragements for aggression (for example) come from in the "social space" around the child. Do they come from older effect agents? If so, they may, being enculturated, encourage only when the culture would value such feedback. Or do they come from young, inexperienced and relatively in vigilant younger folk who are hardly responsible shapers of behavior?

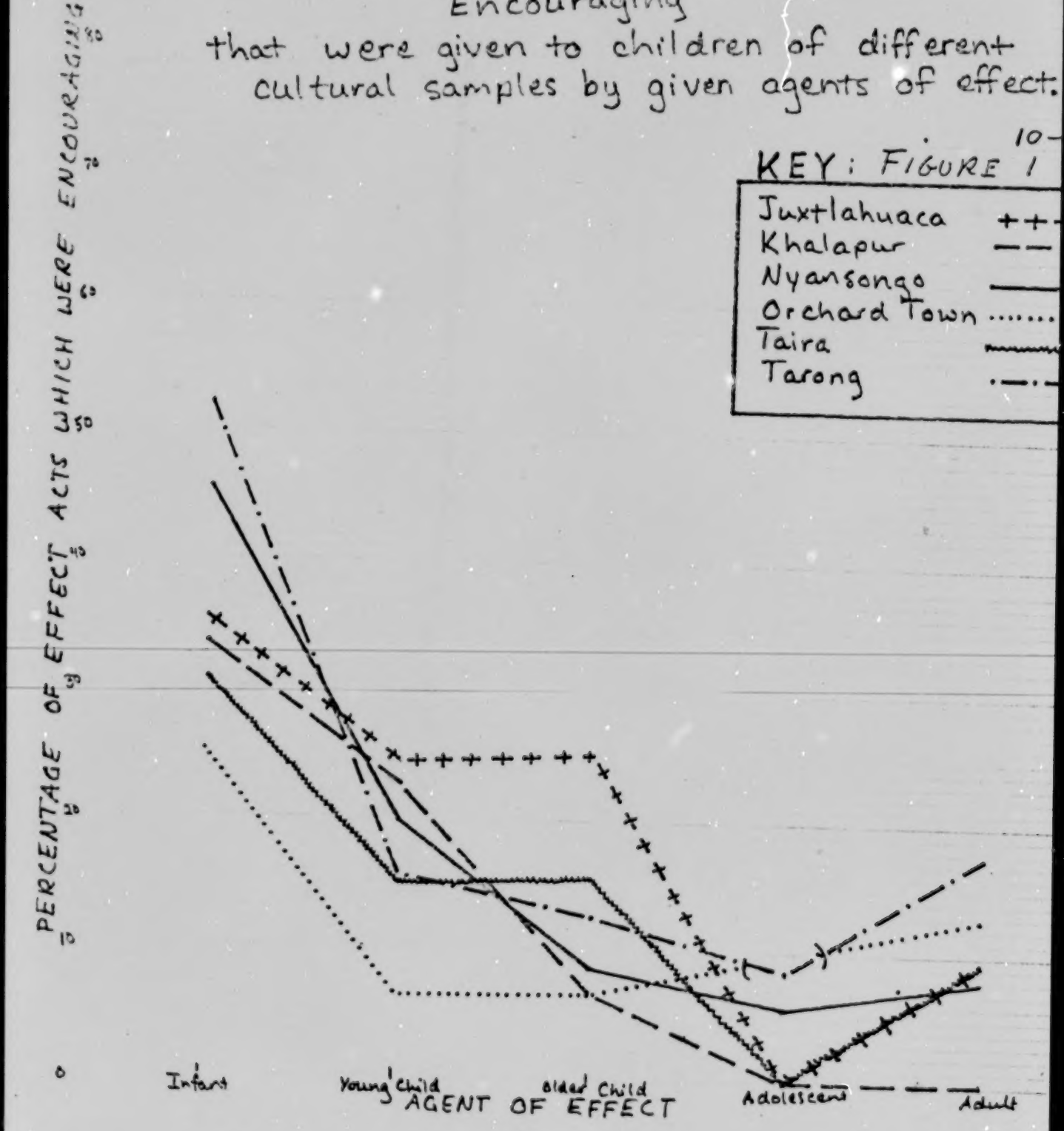
EFFECT ACTS FOLLOWING ANY AGGRESSION
IN ALL CULTURES
ALL P'S CONSIDERED TOGETHER

Agent Group	Encourage Act	F	Discourage Act	F	Ignore Act	F
Infant	30-Gives up set	4	8-Reprimands	3	0-No effect (NA)	25
	40-Encounters difficulty	2	9-Warns	1	33-Hides	1
	41-Hurts self	1	10-Assaults on person	16	34-Avoids	25
	42-Acts hurt	48	11-Insults	2	62-Observes, Listen	4
	43-Asks for help	1	12-Threatens physically	3	90-Ignores	17
	46-Seeks physical contact	1	14-Takes property	4	91-Breaks Interact.	4
	53-Gives approval	11			92-Solitary play	4
	63-Shows pleasure	16				
	65-Is sociable	4				
Young Child	30-Gives up set	11	1-Punishes	1	0-No effect (NA)	114
	32-Deprecates self	1	8-Reprimands	12	33-Hides	3
	40-Encounters difficulty	4	9-Warns	5	34-Avoids	95
	41-Hurts self	2	10-Assaults on person	56	62-Observes	8
	42-Acts hurt	28	11-Insults	30	90-Ignores	36
	43-Asks for help	3	12-Threatens physically	36		
	46-Seeks physical contact	1	13-Threatens punishment	15		
	48-Asks permission	1	14-Takes property	5		
	51-Gives emotional support	1	16-Accuses of deviation	3		
	53-Gives approval	21	20-Suggests	5		
	63-Shows pleasure	10	21-Arrogates self	3		
	65-Is sociable	3	22-Challenges to compete	6		
			24-Is self-reliant	1		
			25-Blocks	8		
			26-Accepts challenge	5		
			35-Acts shy	1		
			70-Deviates	1		
			71-Having unsharable obj.	1		
			74-Denies guilt	2		
Older Child	7-Teaches	2	8-Reprimands	14	0-No effect (NA)	54
	30-Gives up set	1	9-Warns	2	33-Hides	1
	40-Encounters difficulty	3	10-Assaults on person	31	34-Avoids	38
	41-Hurts self	1	11-Insults	10	62-Observes	1
	42-Acts hurt	2	12-Threatens physically	19	64-Starts game	1
	43-Asks for help	5	13-Threatens punishment	2	90-Ignores	26
	53-Gives approval	6	14-Takes property	2	91-Breaks interact.	3
	60-Joins group interact.	1	16-Accuses of deviation	6	93-Practices skill	2
	63-Shows pleasure	4	20-Suggests	4		
	65-Is sociable	10	21-Arrogates self	3		
			22-Challenges to compete	2		
			25-Blocks	11		
			26-Accepts challenge	3		
			71-Having unsharable obj.	2		

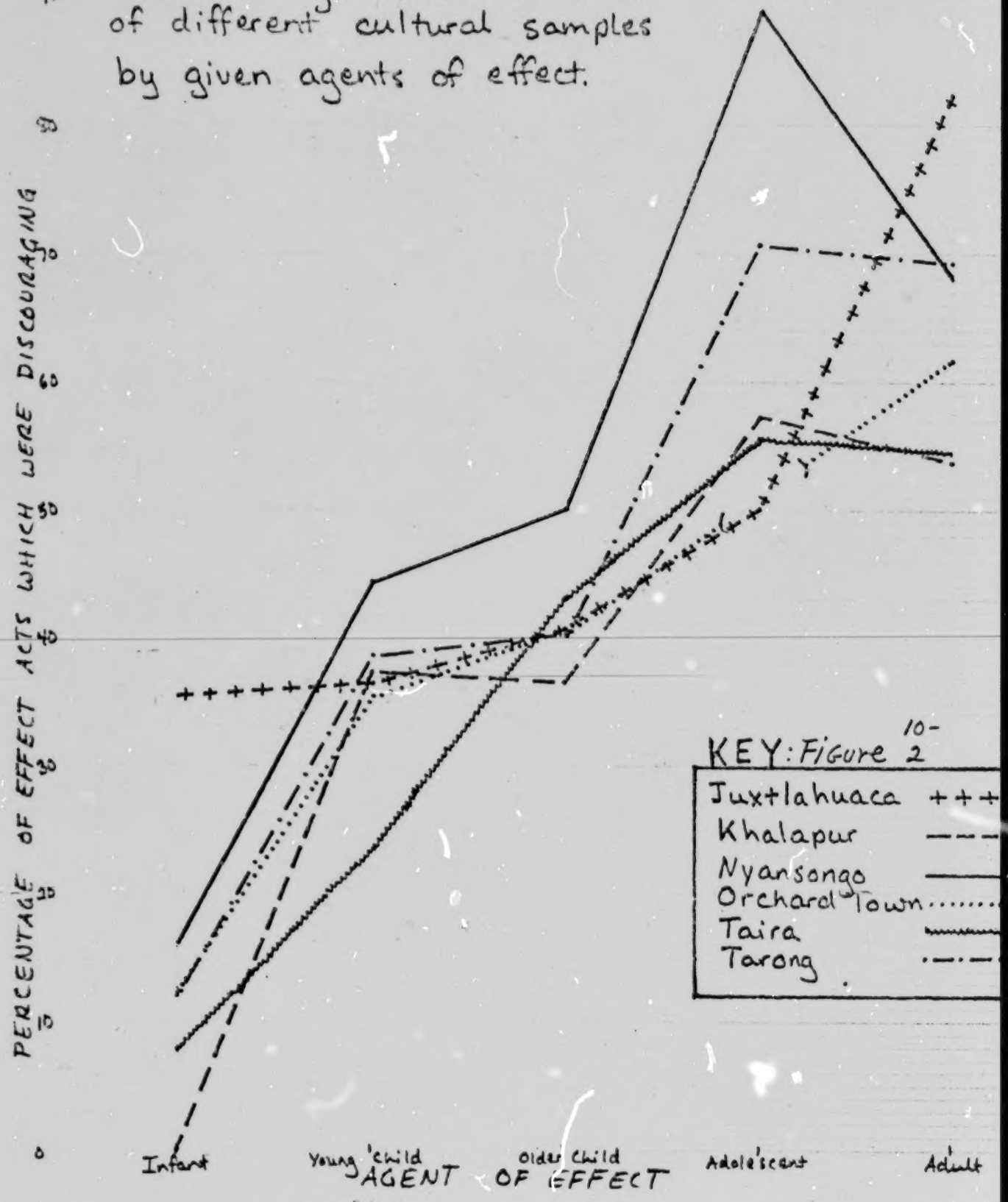
BEST COPY AVAILABLE

Agent	Act	F	Act	F	Act	F
Adolescent						
	30-Gives up set	1	8-Reprimands	8	0-No effect (NA)	5
	42-Acts hurt	2	9-Warns	3	34-Avoids	6
			10-Assaults on person	15	62-Observes	1
			11-Insults	4	90-Ignores	4
			12-Threatens physically	1		
			13-Threatens punishment	6		
			14-Takes property	5		
			15-Destroys property	1		
			20-Suggests	1		
			21-Arrogates self	1		
			22-Challenges to compete	2		
			26-Accepts challenge	1		
Adult	7-Teaches	3	1-Punishes	1	0-No effect (NA)	30
	30-Gives up set	3	6-Frightens	2	34-Avoids	2
	32-Deprecates self	1	8-Reprimands	71	62-Observes	1
	50-Gives help	4	9-Warns	20	90-Ignores	8
	51-Gives emotional support	1	10-Assaults on person	8	91-Breaks interact.	1
	53-Gives approval	9	11-Insults	3		
	65-Is sociable	1	12-Threatens physically	4		
			13-Threatens punishment	2		
			16-Accuses of deviation	4		
			20-Suggests	10		
			22-Challenges to compete	1		
			25-Blocks	3		

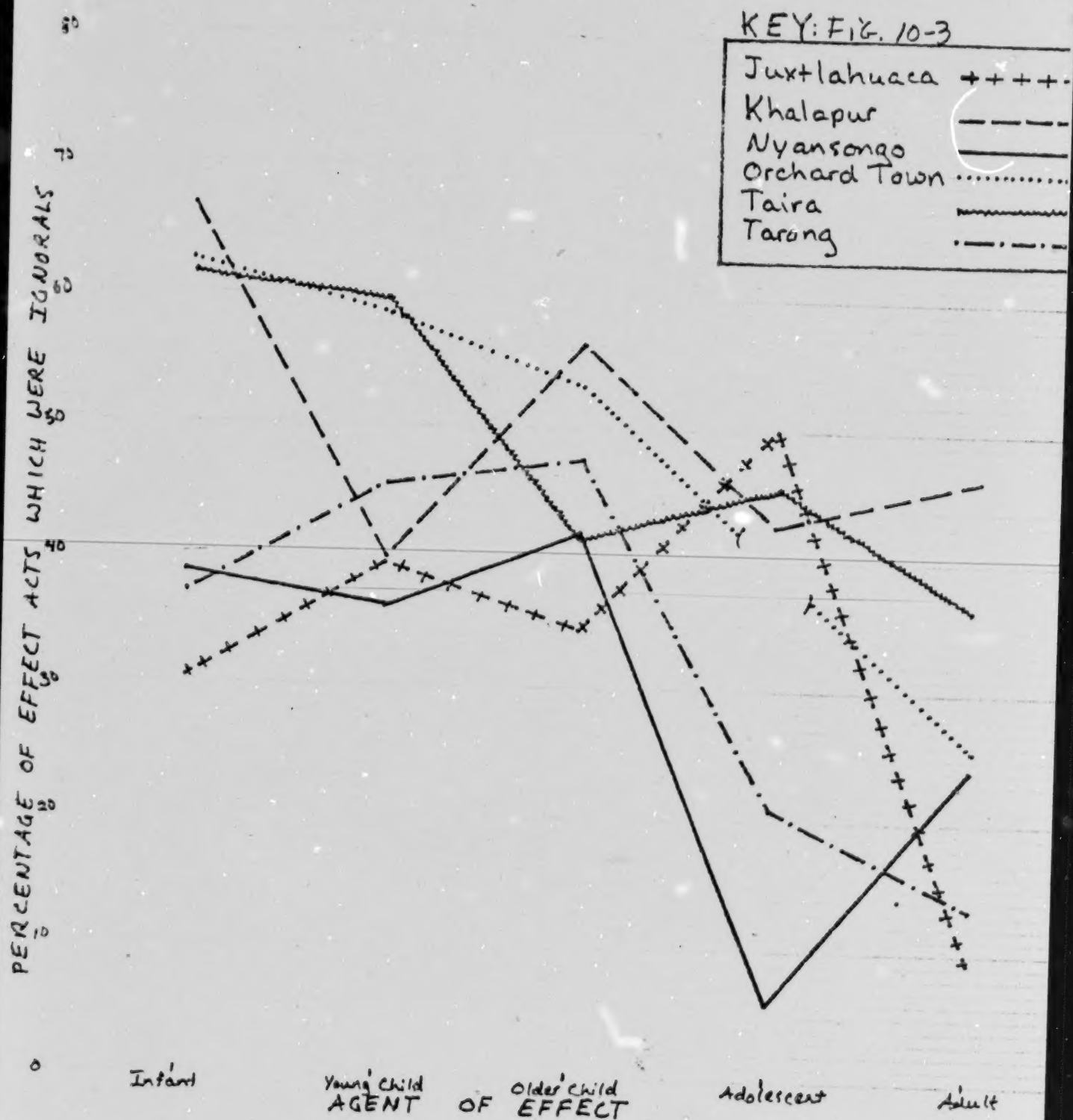
The Percentage of Effect Acts which were Encouraging that were given to children of different cultural samples by given agents of effect.



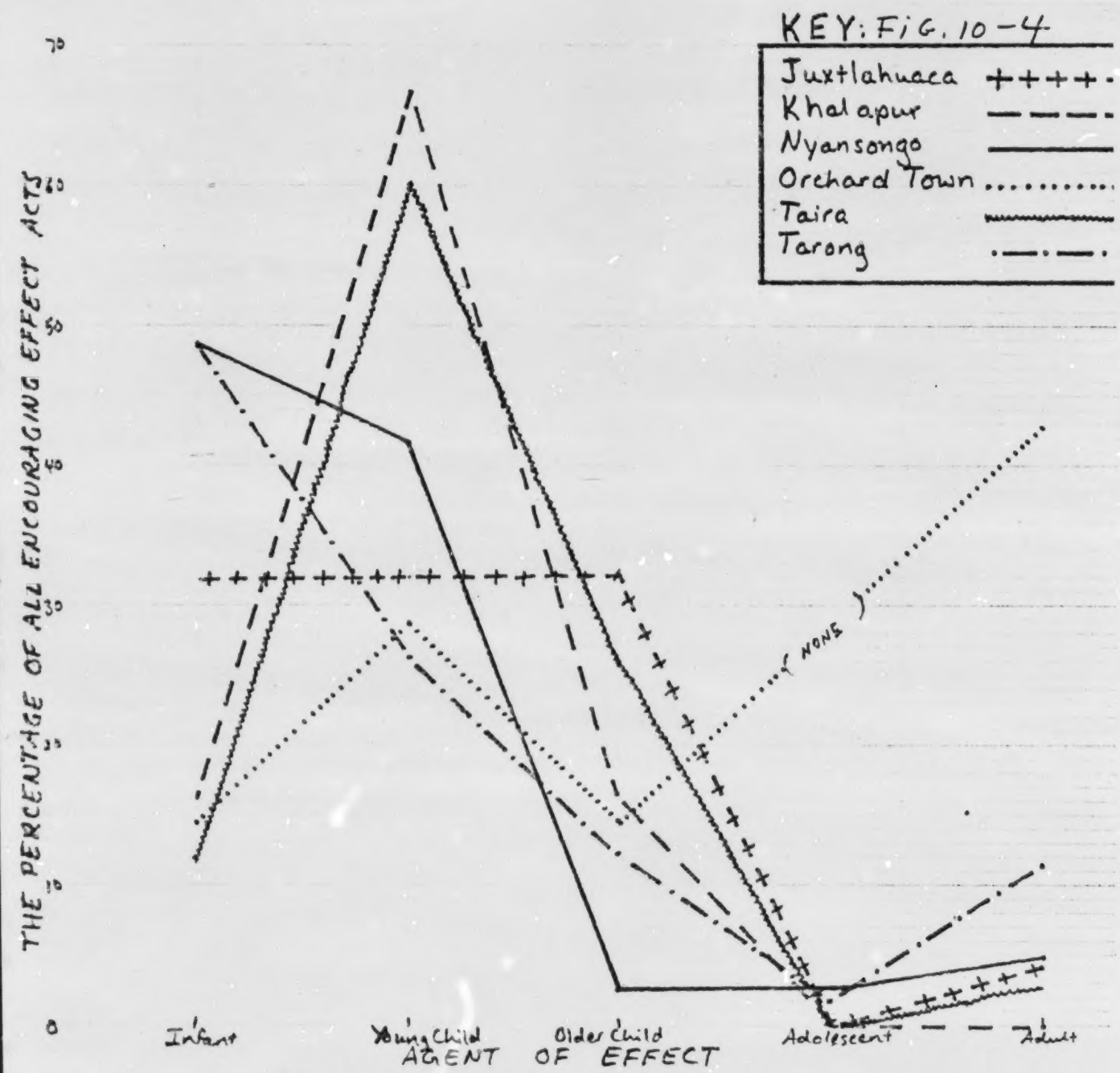
The Percentage of Effect Acts which were Discouraging that were given to children of different cultural samples by given agents of effect.



The Percentage of Effect Acts which were Ignorals that were given to children of different cultural samples by given agents of effect



The Percentage of All Encouraging Effects which were Received by Sample Children from a Given Agent of Effect.
(By culture, summing across all forms of aggression by sample children)
(Each line across adds to 100%)



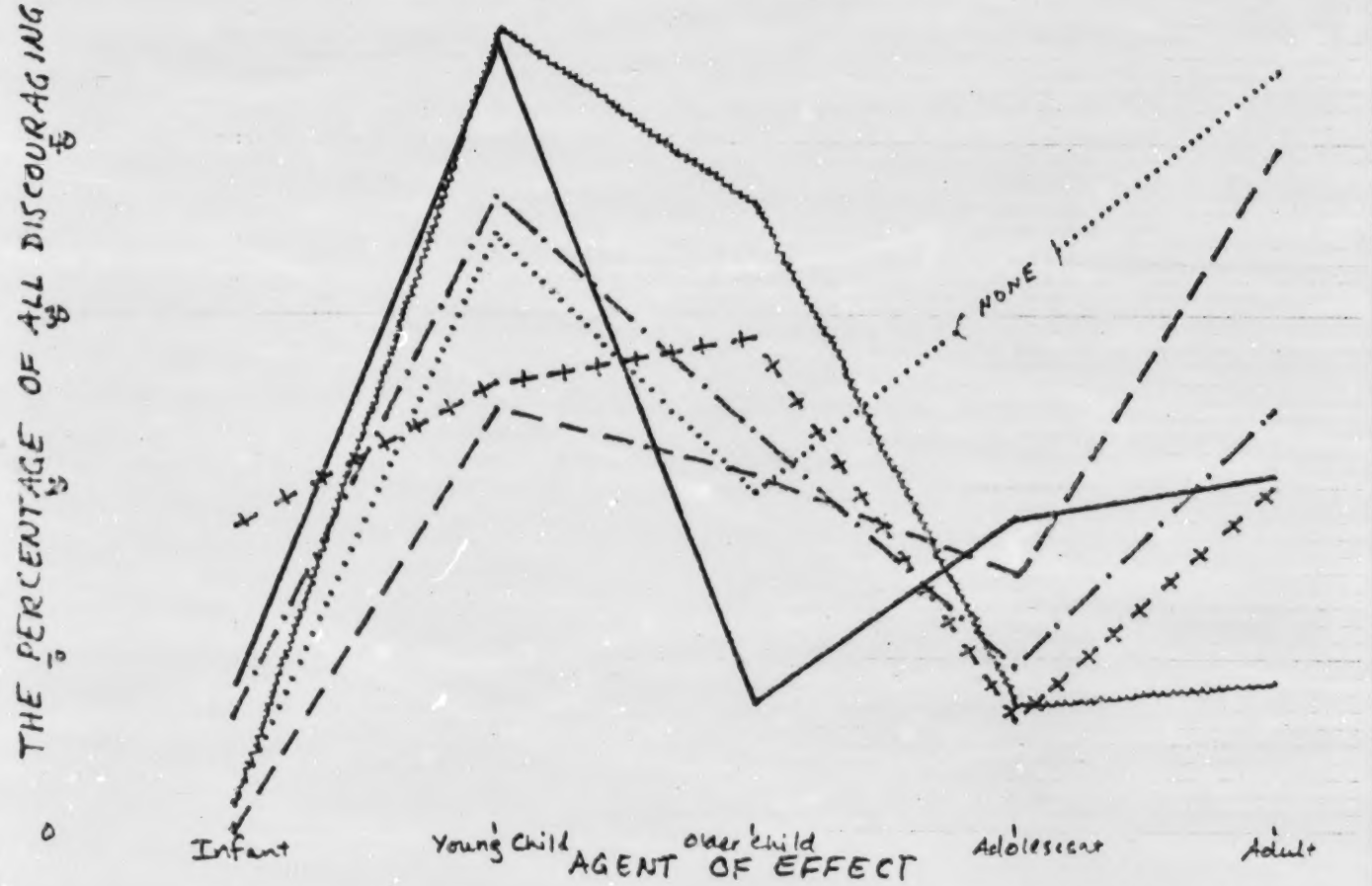
The Percentage of All Discouraging Effect Acts which were Received by Sample Children from a Given Agent of Effect

(By culture, summing across all forms of aggression by sample children)

(Each line across adds to 100%)

KEY: FIG. 10-5

Juxtlahuaca	++++
Khalapur	— — — -
Nyansongo	———
Orchard Town	.....
Taira	———
Tarong	.—.—..



The Percentage of All Ignoring Effect Acts which were Received by Sample Children from a Given Agent of Effect.
(By culture, summing across all forms of aggression by sample children)
(Each line across adds to 100%)

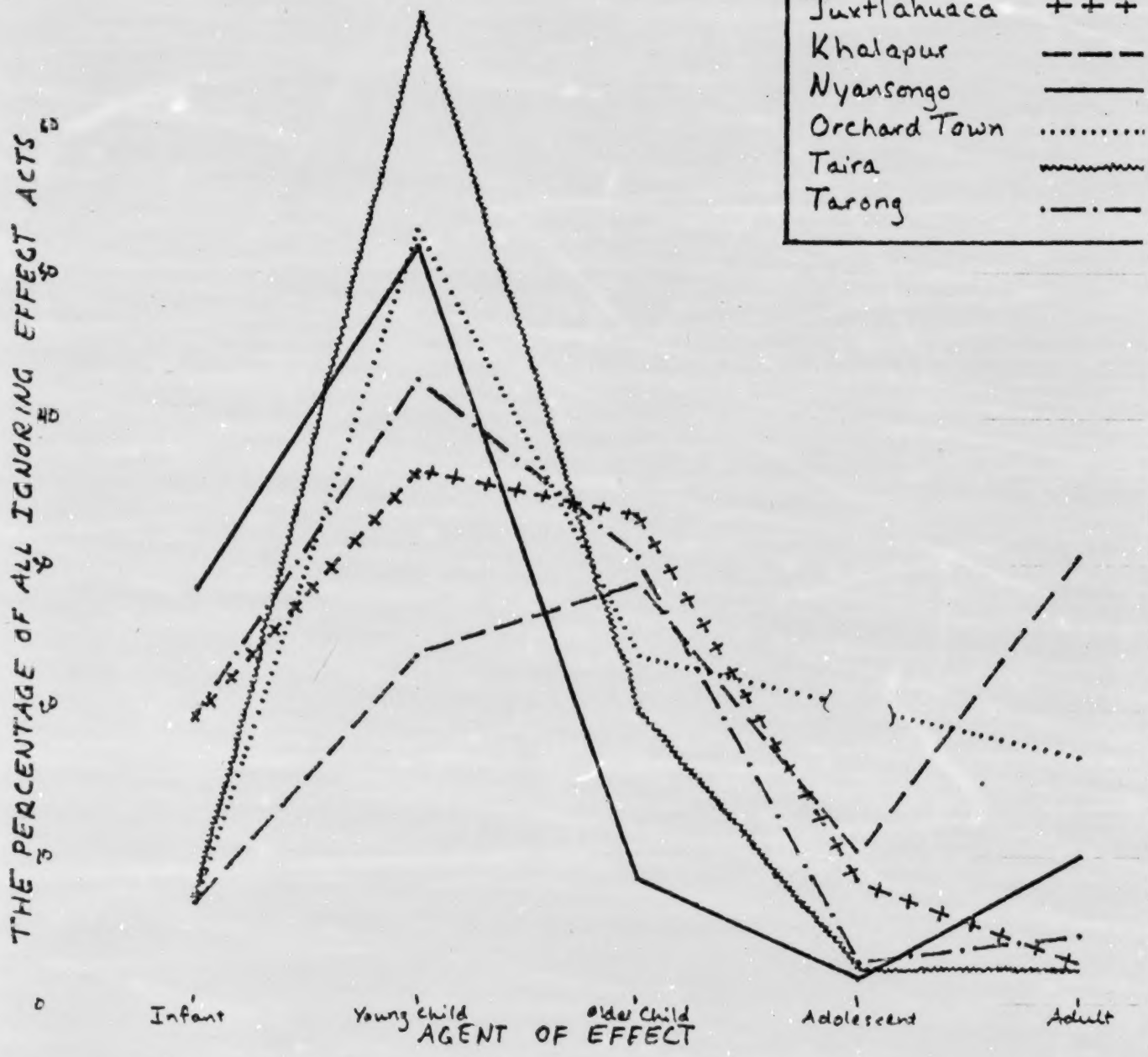


Table 10-3

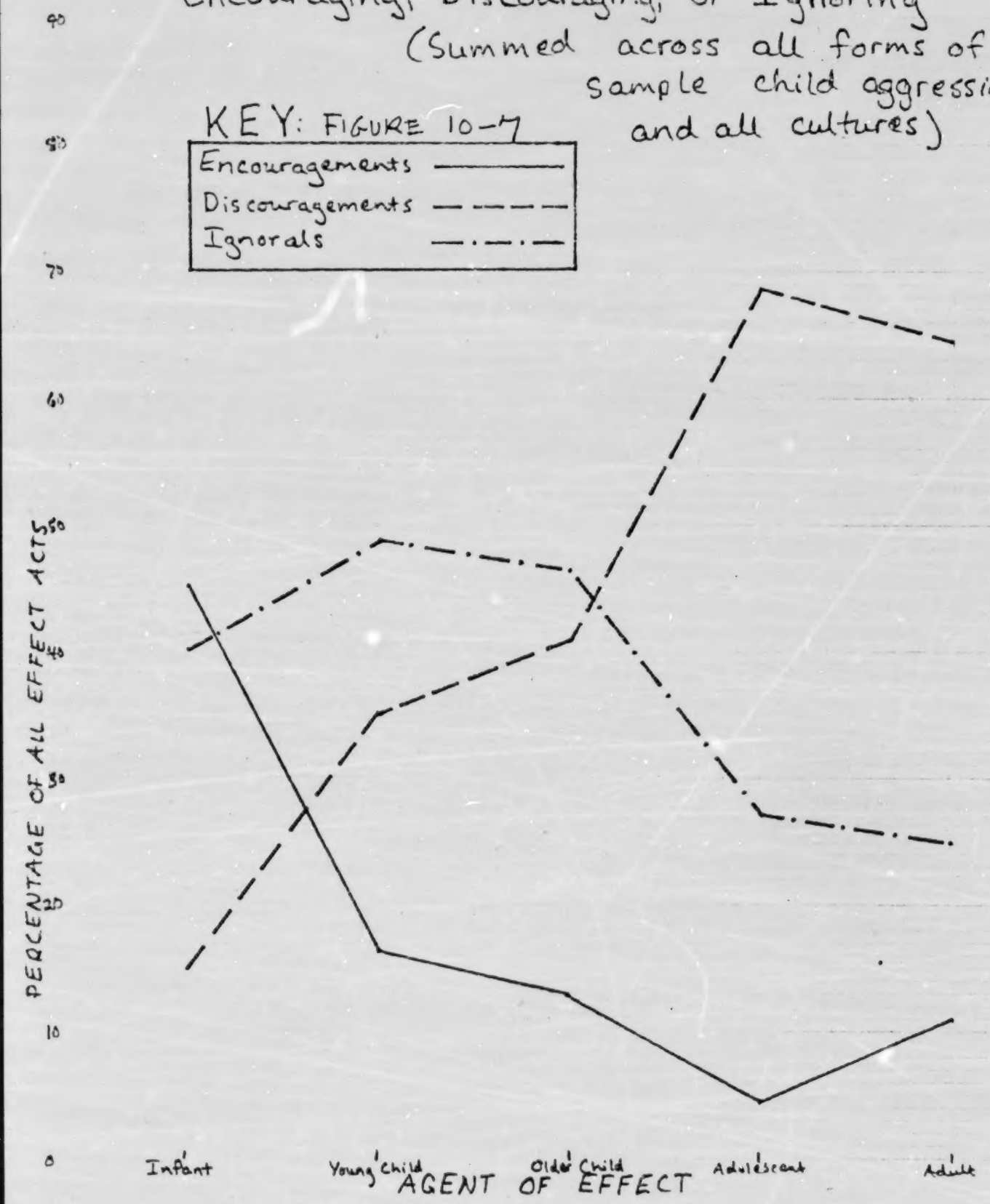
Percentage of All Effect Acts Provided to Sample Children by Various Effect Actors which were Encouraging, Discouraging, or Ignoring. (Summed Across All Forms of Sample Child Aggression and All Cultures.)

	Infant		Young Child		Older Child		Adolescent		Adult	
	per.	freq.	per.	freq.	per.	freq.	per.	freq.	per.	freq.
Encourage	45.1	88	16.2	86	12.9	35	4.3	3	10.9	22
Discourage	14.9	29	35.0	186	40.8	111	68.6	48	64.2	129
Ignore	40.0	78	48.8	260	46.3	126	27.1	19	24.9	50

Percentage of All Encouragements, Discouragements, and Ignorals Received by Sample Children from Various Agents of Effect. (Summed Across All Forms of Sample Child Aggression and All Cultures.)

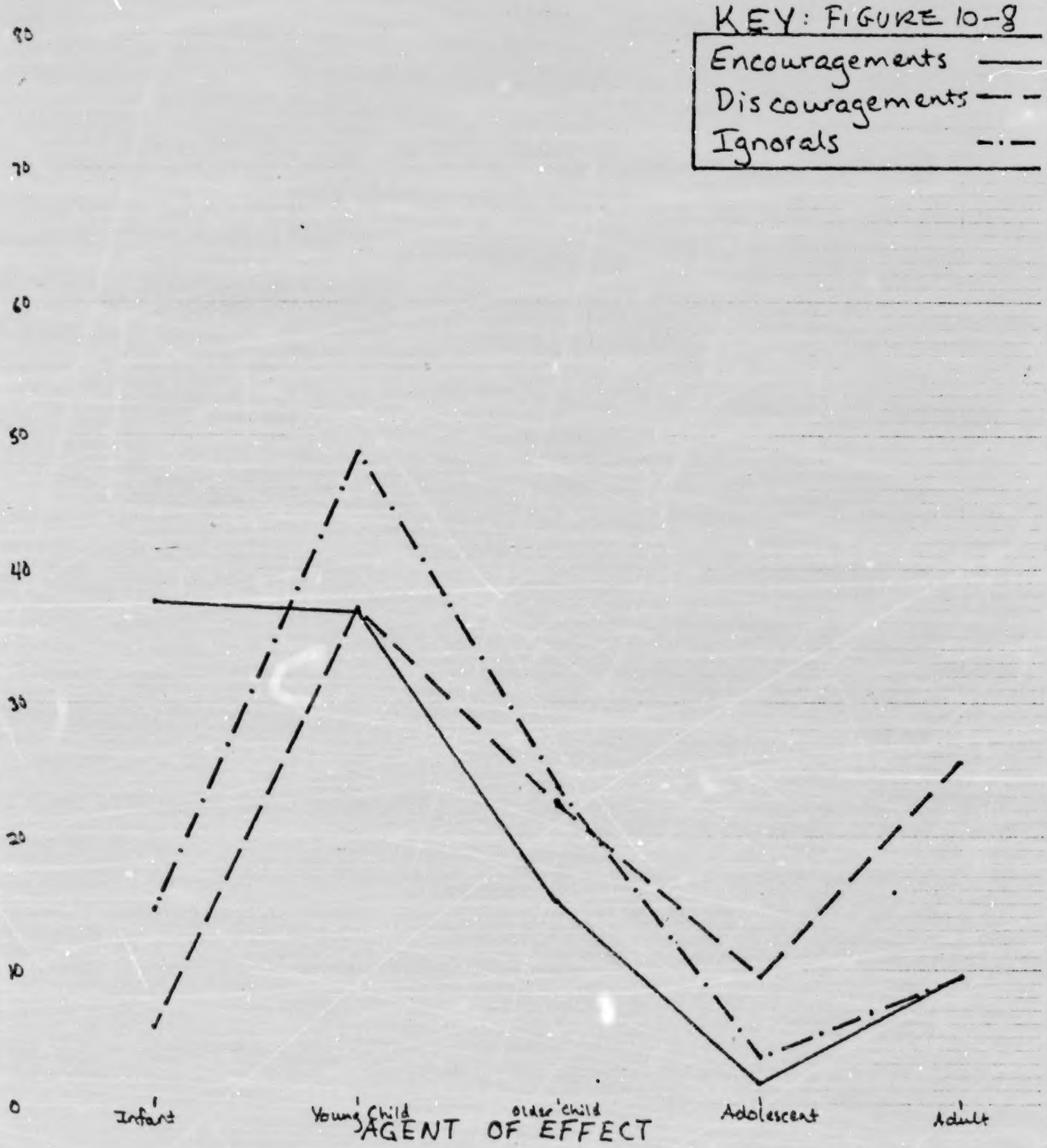
	Infant		Young Child		Older Child		Adolescent		Adult	
	per.	freq.	per.	freq.	per.	freq.	per.	freq.	per.	freq.
Encourage	37.6	88	36.8	86	15.0	35	1.3	3	9.4	22
Discourage	5.8	29	37.0	186	22.1	111	9.5	48	25.6	129
Ignore	14.6	78	48.8	260	23.6	126	3.6	19	9.4	50

Percentage of All Effect Acts Provided to Sample Children by Various Effect Actors which were Encouraging, Discouraging, or Ignoring (Summed across all forms of sample child aggression and all cultures)



Percentage of All Encouragements, Discouragements, and Ignorals Received by Sample Children from Various Agents of Effect

(Summed across all Sample Child Aggression and all Cultures)



The answer is clear in Figures 10-4, 10-5, 10-6, and, in more summary form in Table 10-3 and Figures 10-7 and 10-8. The first three of these Figures point up at least one fact: of all the effect acts received, most of them come from young child effect actors, and this is particularly true for ignorals, but it also tends to be true for even discouragements (though cultural differences are more strong here). Table 10-3 and the related Figures (10-8) gives the overall trends in this respect. Figure 10-7 points up, in a summary fashion, that of the effect acts they did send to the actors, adolescents and adults send mostly discouragements, whereas younger actors tend to give a higher percentage of encouragements. Ignorals, though used by all agents, tend to be more used percentage-wise by younger actors.

f. A brief interpretation

Such data as these figures display leads us to emphasize the importance of infants and other children in the socialization of aggression. It is also important to point out that it follows that, outside the house (where our time-sampled observations were done) much of the shaping of aggression is in the hands of very young and unsophisticated effect givers.

This may well be a large part of the reason that the overall aggression scores do not decline as children get older: the control and shaping of this important system of action is in fairly incompetent hands.

g. Is there displacement of aggression downward?

Three sources of information suggest another kind of "heating up" which makes the early years of our children so filled with aggressive actions of one kind or another. It may well be that young actors (and infants) tend to bear the brunt of things because they can less well defend themselves from the hurting behavior of older people. Consider Table 10-4 where we report (for

Table 10-6

Target Analysis: Correlation of Rates and Proportions of Aggressions toward Four Targets (omit no PR) with Number of Siblings, Older and Younger.

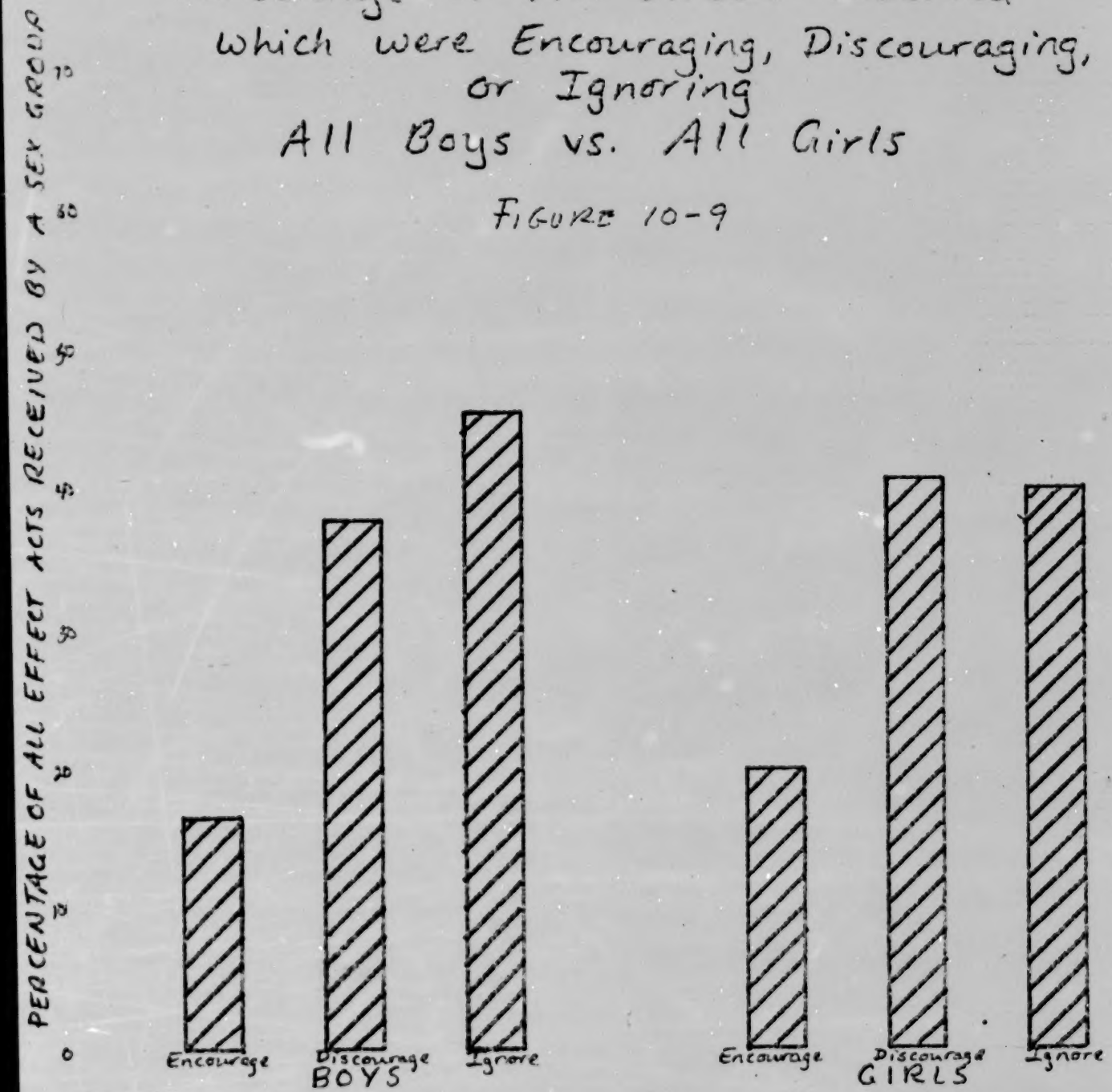
	Number of Siblings		Number of Younger Siblings		Number of Older Siblings	
	Rates	Props.	Rates	Props.	Rates	Props.
All Cultures						
Aggression toward:						
YS	.235*	.240*	.006	-.063	.248*	.302*
YNS	-.094	-.077	-.027	-.006	-.067	-.054
SOS	-.029	-.067	-.206	-.265*	.095	.090
SONS	-.063	-.094	.030	-.007	-.075	-.080
Taira						
Aggression toward:						
YS	-.203	-.295	-.228	-.127	-.156	-.248
YNS	.102	.022	-.008	-.027	.278	.255
SOS	-.055	-.037	0	.132	-.065	-.199
SONS	-.198	-.370	-.247	-.301	.100	.042
Tarong						
Aggression toward:						
YS	.448	.295	.689	.336	.257	.217
YNS	-.200	-.082	.120	.290	-.318	-.266
SOS	-.393	-.467	-.334	-.350	-.314	-.410
SONS	-.017	-.117	-.021	-.072	-.009	-.106
Khalapur						
Aggression toward:						
YS	.084	.298	.088	.340	.061	.202
YNS	.093	.091	.311	-.003	-.051	.095
SOS	.418	.184	-.258	-.300	.571	.329
SONS	-.443	-.347	-.248	-.306	-.342	-.212

(* = .05 level)

	Number of Siblings		Number of Younger Siblings		Number of Older Siblings	
	Rates	Props.	Rates	Props.	Rates	Props.
Juxtlahuaca						
Aggression toward:						
YS	.066	.424	-.138	-.165	.023	.443
YMS	.359	.181	-.050	-.121	.317	.227
SOS	.352	.554	-.276	-.375	.427	.642*
SOMS	.327	.411	.233	-.094	.122	.351
Orchard Town						
Aggression toward:						
YS	.763*	.441	0	-.139	.855**	.636
YMS	-.370	-.405	-.267	-.276	-.201	-.288
SOS	.220	-.062	-.396	-.452	.436	.200
SOMS	-.300	-.199	.063	.309	-.310	-.363
Ilyansongo						
Aggression toward:						
YS	.356	.398	-.107	-.284	.353	.474
YMS	-.141	-.228	-.041	-.207	-.099	-.080
SOS	-.590	-.237	.157	.003	-.633	-.214
SOMS	-.159	-.156	.012	.112	-.143	-.198

Percentage of All Effects Received which were Encouraging, Discouraging, or Ignoring All Boys vs. All Girls

FIGURE 10-9



Feedback from Aggression: Boys vs. Girls

Percentage of All Discouragements Received from Each of Eight Kinds of Effect Actors

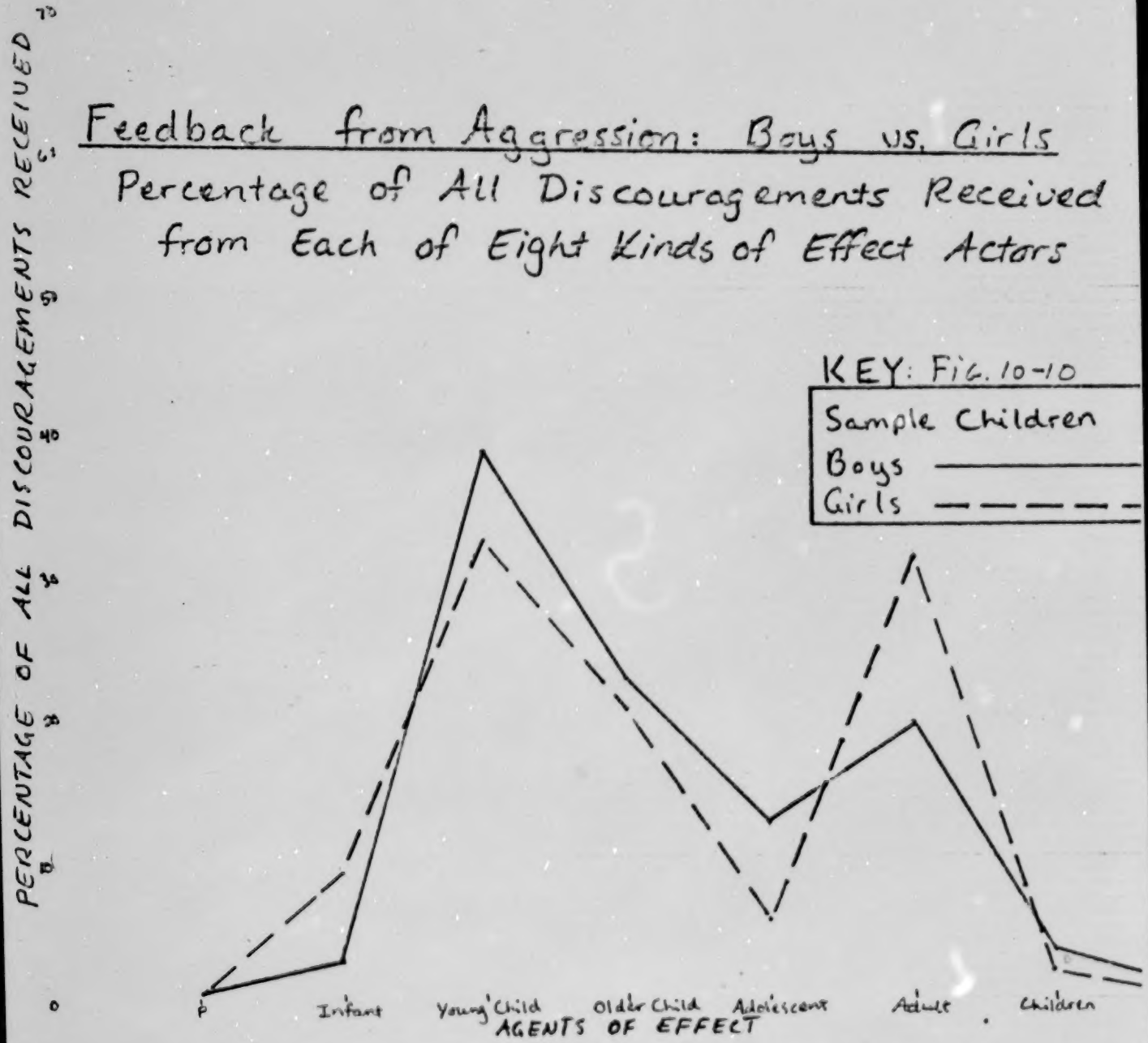


Table 10-4

	Infants	Youngers	Olders	Adolescents	Adults
Assaults:	2.00	1.53	1.60	1.4	1.06
Soc. Assaults	4.5	3.55	4.13	3.25	1.54
Verbal Aggression:	2.47	1.84	1.94	1.64	1.28

all children, for each kind of aggressive action) the proportion of times that certain "others" (e.g., infants, young children, adults, etc.) are the objects of the aggression of our child actors, divided by the times that these same others are the (successful) instigators of such action. The absolute proportions are not as important as the relative ones, which show that infant and other children receive a great deal more aggression than they cause.

Consider, also Table 10-5 where we display the differential percentages by which our child actors send aggression toward certain targets compared to their receipt of all kinds of behavior. Infants, for example receive 12% more of all the aggression our children sent than they receive of the total actions emitted by our children. Adults, on the other hand receive 23% less aggression as compared to their percentage of all actions from our sample children!

Table 10-5

Percentage of times the following groups were objects of aggression minus the percent of times they were objects of all kinds of behavior by children

	Infants	Youngers	Olders	Adolescents	Adults
Assaults:	+12%	+16%	-1%	0%	-23%
Soc. Assaults:	+ 6	+17	+10	-1	-27
Verbal Aggression:	+ 4	+12	+5	-.9	-20

So, older targets get less than their share of hurt, and infants and other children get more than their share. Speaking generally, and without putting the onus in any particular culture, there is some evidence here to suggest that children may need more protection from other children than they now get if successful socialization of aggression is to become feasible.

Finally, we should point out in this context the intriguing data in Table 10-5. The first set of rows in the Table provide cross-cultural, individual level, correlations between the rates and proportions of aggression directed toward certain targets (such as YS (younger siblings); YNS (younger non-siblings); SOS (same age or older siblings); SONS (same age or older non-siblings) and the composition of one's family. The interesting, suggestive, thing is that there is a higher rate and proportion of aggression directed toward one's younger siblings (YS) when one has more siblings, but that this correlation is generated not by the number of younger siblings that one has (r's - .006 and -.063) but by how many older siblings one has (r's = .248 and .302, both significant)!

One interpretation of this is, of course, the classic picture of displacement of aggression downward (toward YS) when one has many demanding older siblings!

Taken together, but in no sense a final, definitive manner, these data help suggest that childhood is fraught with negative affect because children are often picking on one another in rather "unfair" ways!

h. A glimpse of sex differences in feedback after aggression

Finally, let us take a brief look at sex differences in feedback by way of effect acts. We have pointed out that our data show girls in our samples to be less aggressive generally than the boys. It behooves us, therefore, to search in our data for clear evidences of the differential treatment that girls may receive for their aggression as compared to boys, since our major hypothesis

is that socialization differences rather than inherent differences will be explanatory. Our analysis of sex differences has hardly begun, and will not be fully reported here, but we will mention, descriptively, the data of Figure 10-9 and of Figure 10-10. The first points out that boys and girls (overall in all six cultures) tend to receive roughly the same percentage of encouragements, discouragements and ignorals following their aggressive acts. We should say at once, of course, that, since boys aggressed more, generally, they received feed-backs of all kinds more frequently than girls did.

Figure 10-10 presents the data differently, displaying the percentage (for boys as compared to girls) of all their discouragements that came from various effect actors. The point to be made here, quite informally so far, is that girls appear (statistical tests are still in progress) to receive more of their discouragements from adults, whereas boys seem to get more of theirs from young children. It may be that a few strong discouragements from important adults may help us understand why girls generally express themselves less aggressively than do boys. But much remains to be done on this topic.

11. Strategies in the use of Effect Acts within Different Cultures

When we look at the things that correlate with percent of aggression which was encouraged, the percentage discouraged or the percent ignored within each of the cultures there are some results which may reveal some important differences between cultures and which may suggest, exploratorily, some more general hypotheses which we might otherwise miss. The important relationships are displayed in Table 11-1.

a. An Okinawan strategy?

We are struck, for example, with the way that Okinawa stands out for the fact that percent ignoral and percent discouragement are positively correlated with one another whereas these two percentages are negatively related everywhere else. Let's put this differently in a search for clarity. In Okinawa, the children whose aggressions are discouraged are also ignored. In all other cases (and significantly so in all cases taken alone, much less conjointly) the child who is discouraged manages also to be a child who is rarely ignored (that is he will tend percentage-wise to either be encouraged or discouraged).

Could it be that the peers (who do so much of the observable socializing of children in Okinawa) have hit on a system which "works" in the sense of getting aggression levels reduced as children grow older? Theoretically it is probably wise to put the child who calls out for primitive treatment "into Coventry" by ignoring him as well. It is as if the Okinawans are really serious about those who need discouraging, whereas in all other cases these "difficult" children get attention, a factor which in many contests serves as a reinforcer of attendent behaviors, like aggression. The Okinawa children who felt a negative discouragement also get a negative ignoral. Everywhere else (and especially in Orchard Town, Kholopur and Northern Luzon) the child

who tends to get a negative "discouragement" also tends to get attended to or a higher percentage of such acts, an ambiguous state of affairs with possibilities for greater partial reinforcement of aggression or for conditioning an anticipation of "receiving attention" to signs of "being discouraged."

b. A Kenyan strategy?

Kenya stands out in that there the child who is discouraged for aggression tends also to be particularly low in encouragement, or, to put it the other way, the child who tends to be encouraged for aggression tends not to be discouraged. This is a curious state of affairs, and is interesting because in all the others of our communities the use of encouragement and discouragement are quite independent of one another, when analyzed in terms of the children receiving them. This appears to be another interesting variant on the theme of matching the information to the "troublesome" child who "demands" discouragement (and here the quotes around these words betoken the intracultural emphasis of meaning that we see here) is kept clear in his head about what's needed by also being distinctly not encouraged. In all other cases there is again the interesting state of affairs that the use of encouragement and of discouragement are independent of one another when viewed in terms of the children receiving them: meaning that in all these other communities the discouraged child may well also randomly receive a reinforcing encouragement now and then! Or it may be that in these other places the child who gets discouragement from peers and older people may get encouragement from the younger (whipping boys" that he "bullies." Would this interpretation lead us to expect that there is more of a common approach in the Guru of Kenya to the problematic child: less generation gap, less chance of division between whipping boys and bullies?

c. Strategies in Nyansongo and Juxthaluaca

The group in Northern Luzon (Nyansongo) and the Mexican Indian group also stand out from the other cultures. In these two cases, the child whose aggressions are not encouraged tends to be ignored. That is, there is a negative relationship within both groups between percent Ignorals and percent Encouragements for aggression. The sensible interpretation here, too, seems to be that these two communities have developed another way to "behaviorally clarify" something for a potentially problematic child: he is not encouraged and at the same time he tends to be ignored. This reads like the classical idea of the attempt at extinction of an instrumental habit--no reward either through "encouragement" or through attention. In the other four communities there is, again, independence in the use of ignoral and encouragement of aggression when analyzed in terms of the individual children receiving such kinds of effect acts following one or another kind of aggression on their part. So the non-encouraged may occasionally receive more attention, again leading to ambiguity and possible partial reinforcement of aggression.

The clearest fact in these data, however, is that it is rather natural for effect actors (remember, most of the time they are other children, not wise and cognitive adults!) to attent to dangerous objects--that is, to rarely ignore, but rather to actively respond to (one way or another) the child who tends to "call for" being discouraged after he has aggressed. It is that dangerous objects are interesting, call out for action? Other things signal, becoming a dangerous object (in the sense of getting discouragement when you insult or hit or playfully hit another) will put you center stage a bit, which may be sometimes worth it. But this mechanism for mainting (as well as suppressing) aggression won't work in Okinawa, which is the exception which breaks the rule.

Kenya and the Philippine and Juxtlahara (Mexican) groups are dual process cultures, according to this classification. They all give some "attention" to the dangerous child (process one) but in Kenya he is also given less encouragements, and in the other two groups the potentially dangerous child (the one who receives low encouragement) is also treated with ignoral. In the Kenya case the discouraged child is denied the reinforcement of encouragement for aggression. In the other two cultures the non-encouraged child is also denied the reinforcement of attention (that is, he tends to perceive many ignorals when he aggresses.

It remains for us to see if there are other relationships within or across cultures which should follow if these interpretations are correct. If so, the adequacy of these interpretations of "envy" patterns can be systematically evaluated.

We should remark, of course, that the classification of effect acts is a very risky business, and there may, in fact, be a number of useful (and even more useless) ways of bunching together the actions "received" by children when they act aggressively. In light of this the reader should keep clearly in mind the system used in this presentation and also vigilance should be exercised regarding the behavioral assumptions involved. Theory is very much with us when effect acts are under consideration.

Table 11-1: Patterns of Intercorrelation in Effect Acts Received with Cultures.

		Ignore	Discourage
Encourage	Taira	-	-
	Tarong	-.669	-
	Khalapur	-	-
	Juxtlahuaca	-.493	-
	Orchard Park	-	-
	Nyansongo	-	- .603
Ignore	Taira	-.548	
	Tarong	-814	
	Khalapur	-.920	
	Juxtlahuaca	-.648	
	Orchard Park	-.932	
	Nyansongo	-642	

Note: All correlations reported above are significant at the .01 level except for the -.493 one, which is significant at the .05 level.

12. An Analysis of the Dynamics of some Aggressive Strategies

We can only begin to introduce the reader to the rich and complex data and analysis that have to do with what we may well call the "dynamics of aggressive strategies" of children. Some of the analysis is, in fact, not yet completed.

a. An introduction

The thinking behind this analysis started some time ago. The conception of the actor in varied settings and situations is dyadic (and even more complex) basic interaction grew out of some writing of the principal investigator and the influence of Robert Sears. The increasingly cojointive tone of the language (talk of strategies, etc.) comes from the tenor of the times and from influence of A.L. Baldwin who was an early advisor to the Cornell team. Some of the thinking made its way into the Field Guide to a Study of Socialization (Whiting, Child, Lambert, et al.). In the Guide there was great emphasis placed on the distinction between opportunity aggression ("a disposition to utilize situational opportunities for aggression") and aggression irritability or retaliation ("a disposition to respond to hurt from another with aggression") and hypotheses which about the presence of both, and then each separately, were outlined.

We are a bit less certain about the value of the dispositional emphasis in the Guide today, or, rather, we should say that it appears more valuable to view these behaviors both as events and as dispositions. This may merely reflect the value of several formulations of a problem. It may also reflect the general uncertainty of the seventies as compared to the fifties: being unsure that our hypotheses can easily lead us to early origins and root

explanations, we, like social psychologists generally, place our emphasis more on present forces and the apparent manageability of situational factors. Certainly the discussion above (section 5) on the structure of aggression gives basis to some weak talk of the existence of strong dispositions (though not necessarily of traits). But other data may suggest that it is profitable to also think of each occurrence of either "opportunity aggression" or "irritability" as a happening or situational event which might, of course, occur to anybody. Even 'culture" itself may be used explanatorily as a large and complex system of situations--or one massive recurring one? At any rate, in a time of uncertainty, we choose to follow the richer approach and see both where our assumptions of deep metaphor get us as well as following the presently trendy emphasis on models that bring out the immediate causes and the branching possibilities of our phenomena.

The aim of this paper, then, is to examine two different styles of aggression. The first of these is retaliatory aggression or aggressing on the spot when provoked. The second is self-instigated aggression--which is aggression without any apparent provocation from anyone else at the time of its occurrence. It will be argued later on that self-instigated aggression is in fact also a response to some provocation, but a response which is delayed in time. Before contrasting the two aggression styles, we shall, at the risk of repetition, discuss the measurement of each type of aggression.

b. Retaliatory aggression (irritability): measurement and conceptualization

The basic data we worked from were the systematic, naturalistic observations of our sample children's behavior in six cultures. Each unit of behavior was broken down into a three act sequence: an instigating act that

elicits a central act which is then followed by an effect act. With over 18,000 sequences observed reduction was demanded, so the instigating acts have been classified into 25 categories; the central acts into 12; and the effect acts into three broad categories (see Section 10 above).

Both instigating and central acts have been coded for our three different "types" of aggression: social assaults, physical assaults, and miscellaneous (but mainly verbal) aggressive acts. In constructing a measure of retaliatory aggression, it would be natural to use a ratio that would reflect a child's tendency to react aggressively to aggressive provocation. This, in fact, was the first measure utilized. For each subject, we counted the number of times he received aggressive instigations and determined the proportion of times that he reacted aggressively to these instigations. We proceeded to name this preliminary measure of retaliatory aggression retaliatory proportion.

In the course of computing the retaliatory proportion of our subjects, one thing became obvious: aggressive instigations are not the only instigations that provoke aggressive responses. In fact, being ignored was by far the most common provocation of aggression. Refusing (requests) or reprimanding were also frequent provocations to aggression. We therefore faced a problem of whether these three instigations should be included in our measure of retaliatory proportion or not.

As a solution to this problem, we decided that only those instigations that were psychometrically equivalent to the three original aggressive instigations would be included. Two measures are said to be psychometrically equivalent if they have similar means, variances, and co-variances.

To determine whether the six instigations were psychometrically equivalent, a measure of retaliatory proportion was computed for each of the six instigations separately (e.g., the proportion of times a child reacted

aggressively when he was ignored). An examination of these six measure of retaliatory proportion proved to be very informative. First of all, reprimanding provoked retaliatory aggression to a much lesser extent than the other five instigations. Secondly, the proportion of aggressive reaction to refusals correlated negatively with the other five instigations! These considerations led to a decision to drop reprimands and refusals as provoking instigations in the measurement of retaliatory proportion.

The final measure of retaliatory proportion was therefore based on four kinds of provoking instigations: social assaults, physical assaults, verbal aggression, and ignorals. The first three were chosen largely on the basis of rational considerations, while the last one was included on more empirical grounds. All four, however, do appear to be psychometrically equivalent. The mean retaliatory proportion elicited by each of them were roughly equal (.26, .28, .30, and .31 respectively) and so were the variances (.12, .13, .08, and .13 respectively). The intercorrelations among them are uniformly low but positive, ranging from .03 and .12 (see Table 1). This suggests that the four instigations may perhaps be viewed as alternative (but functionally equivalent) ways of drawing aggression from children. It should be noted that this equivalence holds "across the board" for our subjects and not necessarily neatly in each culture, age or sex grouping.

Table 12-1
Inter-correlations among four instigations in terms of the retaliatory proportion elicited by each

	Physical agg.	Verbal agg.	Ignorals	Other three instigations
Social agg.	.083	.044	.051	.064
Physical agg.		.047	.125	.070
Verbal agg.			.025	.072
Ignorals				.094

c. Self-instigated and related aggression variables

While some children tend to retaliate aggressively to provocation, others tend to engage in aggressive actions without apparent provocation. To measure this tendency among our subjects in the six cultures, a measure of self-instigated aggression was constructed. Among the 25 categories of instigations, one of them coded the acts for which the observer saw no apparent instigation; i.e. self-instigated acts. Quite simply, the measure of self-instigated aggression was derived from a count of the aggressive central acts emitted by each child that had no apparent instigation. To control for the fact that different children were observed in different amounts of action, this figure was divided by the number of total acts observed for each child. In a sense this measure is related to the notion of "open and level" in the learning literature.

Our other measures of immediate interest were derived from the data. The first of these was a "picked-on" score. To measure how often a particular child was "picked-on," we counted the number of times he was the recipient of aggressive instigations from other people. To control for individual differences in activity level, this number was divided by the total of all instigations received by the child. The resulting ratio was our "picked-on" score.

The second measure was called the "range of instigations." Here, the intent was to measure the breadth of the extent to which a child apparently perceived other people's behavior as calling for an aggressive response rendering different instigators behaviorally equivalent in this respect. This index was derived by counting the number of kinds of instigations to which the subject responded aggressively and dividing this by the total number of kinds of instigations received. Some children, for example, only aggress when

they are either hit, insulted, or reprimanded, or even when being helped. This measure could also be taken to reflect a "readiness to aggress" on the part of the subjects. (As we shall see below, this index reflects a good deal of what we will later tentatively refer to as "sneaky" aggression, as when, having been helped by his older sister, a boy will take the opportunity to display anger (and get away with it through "sneaky" surprise?).

The other two variables which were derived and which are of immediate interest, were both measures of aggressive behavior among the subjects. A proportion of overall aggression was computed by determining the proportion of all acts performed by a child that were aggressive (i.e., either sociable assaults, assaults, or insults). The rate of overall aggression was simply the average number of aggressive acts a child performed per five-minute observation period.

d. Retaliatory and self-instigated aggression as contrasting styles of aggression

In a previous paper, Lambert (1974) speculated that retaliatory and self-instigated aggression may be viewed as contrasing expressive styles very much like the "potents" and "strategists" being studied by John Roberts (see Lambert and Lambert, 1973). The tentative assumption being made here is that all aggression may in fact be provoked: the difference between retaliatory and self-instigated aggression is not the presence or absence of provocation; but depends, rather, on whether the subject reacts to the provocation immediately or waits for a more opportune moment. The retaliators would be more like the "potents" while the "wait for a good chance" children correspond to Roberts' "strategists."

There is some empirical support for this interpretation of retaliatory as opposed to self-instigated aggression. First of all, the correlation

between the two kinds of aggression is .32. However, if we considered this degree of relationship to be merely a function of the fact that they both reflect general aggressive tendencies and partial out the proportion of overall aggression from the two variables, the correlation between retaliatory and self-instigated aggression disappears. The results are duplicated if the rate (instead of the proportion) of overall aggression is used.

There are two other interesting facts regarding these two types of aggression. Both retaliatory and self-instigated aggression correlate almost equally with our "range of instigation" variable (.43 and .41 respectively; $p < .01$). Thus, both retaliators and self-instigated aggressors appear to have the same degree of breadth in their "readiness to aggress."

The correlations with the "picked-on" score is also of great, perhaps major, interest. Apparently, people who engage in self-instigated aggression more, tend to be "picked-on" to a much greater extent than people who retaliate immediately and on the spot. The respective correlations are .45 and .12, the difference between these correlations being significant at the $p = .01$ level.

At this point, let us pause to examine two different interpretations of self-instigated aggression. One view of the highly self-instigated aggressor is that he is a bully who aggresses without provocation. If this were so, then one should expect a greater "readiness to agress" among these children relative to the retaliators. However, the data show no such difference. Secondly, the self-instigated aggressors are actually "picked-on" more, and to a significant degree. Again, this would not fit too well with the interpretation of the self-instigated agressor as bully. These considerations have led us to hypothesize a second interpretation of self-instigated aggressors: that they are actually meek, possibly little children, who, when bullied or picked-on, wait for a more opportune moment to retaliate rather than retaliating on the spot.

e. Further correlates of the two aggressive styles

Having argued that retaliatory and self-instigated aggression present two contrasting styles of aggression, we shall now present further evidence for the discriminant validity of the two measures.

The nucleus of the Six Cultures Project consisted of three basic sets of variables: those which refer to the mother's socialization of the child, those reflecting the family structure variables, and those indicating the setting of situational variables. In addition to these, the present report on aggressive behavior in six cultures also included a set of (eventually) 34 aggressive variables including the two central variables currently being discussed. In order to gain a better understanding of retaliatory vis-a-vis self-instigated or what may usefully be called strategic aggression, the following process of data analysis were followed. First, the two variables were correlated against every other variable in the four different sets of variables. Next, the two sets of correlations were examined in pairs and a statistical test performed to see whether the difference between the two correlations in any given pair could be attributable to chance or not. These statistics are presented in Table 12-2. We shall now proceed to summarize some of the findings that resulted from this procedure.

Both retaliatory and strategic aggression correlated with all the family structural variables to more or less the same degree. When the setting or situational correlates were examined, we found that strategic aggressive children tend to be picked-on more by adults and in the late afternoons relative to the retaliatory aggressive children. The most interesting findings, however, appeared when the other aggressive variables and the childhood maternal socialization variables were examined.

The measure of self-instigated aggression correlated to a greater degree with 12 of the 25 other aggression variables than did the measure of

Table 12-2

Correlations between retaliatory proportions, self-instigated aggression and "the works" of other variables.

	Retaliatory Proportions	Self-Instigated	t
% Aggr. Init. - learning	-.21315	-.16627	-.47526
" - instigator male	.02024	-.04572	1.06355
" - female	-.08277	.03295	-1.14608
" - infant	-.13224	-.12809	-.04141
" - young child	.13572	.18486	-.49416
" - old child	.03657	-.04925	.84767
" - adolescent	.15592	-.02919	1.85269
" - adult	-.23001	.02715	-4.34764**
" - younger	.00548	-.05835	.63001
" - same age - older	.00314	.10956	-1.05522
" - kin	-.13735	-.18566	.48595
" - non-kin	.12060	.21191	-.91615
% Aggr. Init. - morning between noon	.05142	.01802	.32943
" - early afternoon	-.10201	-.14053	.02502
" - late afternoon	.00067	.23725	-2.40714*
" - at night	.04794	-.00365	.50691

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Table 12-2
(cont.)

	Retaliatory Proportions	Self-Instigated	t
11- [illegible]	.070666	.18115	-.95723
12- [illegible]	-.05004	.01366	-.61766
13- [illegible]	-.09742	.11391	-1.84038
14- [illegible]	-.01042	.27736	-2.35584 *
15- [illegible]	-.01683	.00412	-.19212
16- Standard Questions: What do you do when			
1- P asks for help or reassurance? ...when he tries	.18288	-.05488	2.17944 *
2- down or gets scratch ...when he can	-.12998	.09327	-2.03416 *
3- really do it himself ...when you can	.12586	-.07739	1.65782
4- busy doing something else How quickly would you react	.05190	-.09635	1.24098
5- him when he cried ...as baby ...when you were	.08081	.14667	-.54161
6- busy	-.04385	-.09412	.40068
7- ...at night What happens if P --	.00638	.04260	-.28122.
8- fails to do chores What if he delays with	-.10188	-.05316	-.37942.
9- tells him to do something Do you want P would play	-.13772	-.27410	1.29919
10- alone or out group Do you think P should help	-.11703	.13344	-2.34666 *
11- younger children or need his services How do you handle a	.11836	.00380	1.03254
12- neighborhood fight If P gets angry with you	.02624	-.17495	1.74786
13- would, what do you do What do you do when	-.06089	-.03668	-.20981
14- P teases younger children When disciplines P when	-.03299	.11162	.62037
15- he is naughty When P is naughty	-.11614	-.15034	.26736
16- how is he punished	-.05356	.05595	-.99663
17 Setting Questions:			
1- % of P's best play with	.20965	.28747	-.80698
2- " - dress	-.10162	-.10814	.06494
3- " - work	-.01666	-.14691	1.29775

Table 12-2
(cont.)

	Retaliatory Proportions	Self-Instigated	t
sociability	.06801	.18958	-1.06024
freq. agg. act. to opportunities	.10373	-.12374	1.86905
frustration tolerance	.17214	-.10598	2.23425*
tendency to reinforce overall competency in role status	-.12988	.19161	-2.77870**
mother responsibility for child training policy	.01147	.27880	-2.36070*
prop. of caretaking done by mother	-.02832	.12598	-1.39538
mother's attitude toward father	-.05988	-.07152	.11215
family affect	.09836	.04194	.37996
mother's esteem of father	.02768	.02421	.03091
general warmth of mother	-.08146	.16353	-2.36094*
mood variation of mother	.08160	.07072	-.34914
general hostility of mother	.09110	.15853	-.61557
mood variation of husband	.14758	.05651	.81972
mother's expression of hostility	-.07172	.11988	-1.48659
mother's self-esteem	-.06932	.01995	-.86532
contingency of warmth of mother	.17090	.22966	-.56269
contingency of hostility of M.	.03047	.19960	-1.58360
punitiveness or negativism	.01108	.20690	-1.67311
assn. of rules	-.14180	.12359	-2.43814*
amt. of communication of rules	-.09025	.08430	-1.62940
consistency of agg. rules	-.05647	-.09420	.34880
amount of power	-.02974	.13985	-1.60292
consistency of mother's rules enforcement	.05121	.21436	-1.56182
mother responsibility for reinforcing achievement	.07300	.20886	-1.36057
frequency & intensity of physical punishment	.10341	.04839	.53018
frequency & intensity of deprivation	.06601	.14238	-.70148
tendency & ability to contingency of power			
exert material rights			

Table 12-2
(cont.)

	Retaliatory Props.	Self-Instigated	t
- number adult. in h...	.017	.06504	-.81121
- total # people in h...	.042	.06516	-.22906
- total non-adults	.008	.01538	-.07283
- abs(-) adult fem...	-.006	-.05151	.44992
- total # people in city	-.091	.00424	-.94425
- center of interaction - P	-.034	.04635	-.79473
2-	.046	.11580	-.69340
3- Type of household (use coding scheme	.054	.20792	-1.55281
4-	.110	.09252	.17384
5-	.070	.19862	-1.29490
6-	-.081	.01016	-.90311
7- type of city	-.090	.02500	-1.14121
8-	-.056	.03123	-.86268
9-	-.071	.03664	-1.06690
10-	.092	.21331	-1.20250
11- people with whom	.027	.22264	-1.95971
12- P can interact	.055	.13195	-.72774
13- daily	.050	.21090	-1.60580
Mother Interviews			
- strength of assurance	-.01684	.15857	-1.41339
2- nurturance	.12950	.16808	-.32961
3- responsibility	.11258	.14733	-.30004
4- self-reliance	.12351	.24077	-1.05619
5- achievement	.02640	.23216	-1.68082
6- obedience	-.12184	.13954	-2.36576*
7- dominance	.28056	.33680	-.49415

Table 12-2
(cont.)

	Retaliatory Proportion	Self-Instigated	t
1- Rage at Father to 11	.12067	.39267	-2.87973 **
1- Hate at Father to 11	.04499	.30353	-2.64662 **
2 Mother Father Sex			
responsibility dimension			
1- on the chart use of positive	-.04761	-.05509	.07354
2- effect by mother control of child's	-.06471	.02216	-.85508
3- egg + discipline extent of mother	-.01762	.14324	-1.59862
4- caretaking of baby extent of mother	.11074	-.04098	1.39490
5- caretaking of child control of mother	-.04338	-.20673	1.63878
6- directed egg + dimension emotional instability	.03312	.00867	.74808
7- of the mother	.12488	-.02878	1.52383
33 Family Structure			
1- oldest - not oldest sib	-.08	.04423	-1.21898
2- youngest - not oldest	.097	.03052	.65149
3- only - not only	-.036	-.01840	-.17178
4- oldest - other sibs	-.143	.02208	-1.63123
5- only or youngest - younger sibs	.113	.02979	.81686
6- number of older sibs	.024	.03859	-.14242
7- number of younger sibs	.032	-.11081	1.40524
8- total number sibs	.049	-.02303	.70400
9- number of girl cousins	-.030	.00153	-.30769
10- number girls one's size	.010	-.00210	.11803
11- caretaker / trace ratio	.022	.06937	-.46852
12- father's presence - not (infancy)	.094	.12108	-.26963
13- father's presence - infancy	-.016	.06339	-.78550
14- amount - father home	.0160	.00752	.57834
15- (no missing values for intact)	.049	-.03875	.86832

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Table 12-2
(cont')

		Self-Instigated	t * = .05 ** = .01
Z Aggression Vars.			
Rate - Social Assaults	.23075	.56580	-.39636
Rate Phys. Assaults	.26712	.26521	.019679
Rate - Misc. Assaults	.25887	.48803	-2.57541 *
"Total Rate"	-.00612	.05357	-.58219
Prop. - social assaults	.26985	.61194	-4.23048 **
Prop. - Phys. assaults	.24174	.29510	-.55098
Prop - Misc. Agg.	.35717	.60128	-3.04520 **
Self - Inst Agg.	.32490	1.000	
Range of Insts.	.43448	.40908	.28926
Rate of overall agg.	.30479	.60755	-4.27588 **
Prop of overall agg.	.50375	.78225	-4.80531 **
"Related" scale	.11672	.45435	-3.69273 **
Rate of Behavior	-.10520	-.04433	-.59601
Retaliatory Prop.	1.000	.32490	
Total Acts	-.10383	-.01324	-.88734
Total Protocols	-.07529	.03371	-1.05818
Prop of Inst $^{P}_{10}$	.03117	.17848	-1.45831
Prop of Inst. $^{P}_{11}$	.06531	.01613	.47988
Prop of Inst. $^{P}_{12}$	.17101	.34769	-1.80544.
Prop. of Inst. $^{P}_{14}$	-.04271	.25298	-3.00392 **
Rate of Inst. $^{P}_{10}$	.00521	.17488	-1.68044
Rate of Inst. $^{P}_{11}$	.04008	-.00629	.95194
Rate of Inst. $^{P}_{12}$	.05997	.27675	-2.19768 *
Rate of Inst. $^{P}_{14}$	-.00642	.23109	-2.61942 **
Total Raw Insts.	.02595	.25266	-2.28570 *

retaliatory aggression. These variables are: (1) rate of miscellaneous (verbal) assaults, (2) proportion of social assaults, (3) proportion of miscellaneous (verbal) aggression, (4) rate of overall aggression, (5) proportion of overall aggression, (6) "picked-on" score, (7) proportion of instigations that were ignorals, (8) rate of instigations that were verbal aggression, (9) rate of instigations that were ignorals, (10) total number of raw instigations, (11) proportion of total instigations, and (12) rate of total instigations. It is easy to discern a distinct pattern from these findings: the self-instigated aggressor is a child who is picked-on or bullied more often, at the same time tends to aggress more often, especially with insults and social assaults during play.

An examination of the socialization variables will temporarily complete the picture. Here, we find that the self-instigated aggressor tends to have mothers who stress obedience, tend to conform, are subjected to greater consistency in role status, have mothers expressing more warmth, are subjected to greater communication of rules, and have mothers who express hurt when the child gets angry. The pattern that emerges here is one of the self-instigated aggressor being greatly subjected to maternal control.

To summarize, the strategic aggressor, particularly relative to the immediate retaliator, is a child dominated by his mother, often bullied, and who retaliates through the use of insults or sneak assaults during play.

f. Summary and interpretations

When we recognize the tremendous proportion of observed aggressive actions which are instrumental, it is probably very difficult to keep aggression out of childrens' actions totally. This, and other considerations, have led us to take an interest in the possibility of discovering some of the differential strategies children explore in dealing with the social problem of instrumental

(and other) aggression. Knowledge of such strategies may be useful in applications and interventions or attempts at "shaping" behavior.

Because of our considerable interest in retaliation, we have found the retaliatory proportion to be an interesting starting point, though we recognize that there are probably a number of fruitful ways to begin. If we had more data on each of the individual children, we would begin with an analysis of each of the four instigation components that are involved in the proportion because there are very interesting suggestions at the cultural level only that where the children in a culture tend to aggress when they are ignored, the average overall warmth of the mothers in their socialization practices has been high, and so on. But let us remain with the individual level, and with the summated within-culture differences as a basis for discussing the issue of strategies of aggression.

We are not yet using the term 'strategies' as an analyzed technical term, but rather more in the manner that some of our colleagues in cognitive psychology at Cornell have begun to use it to recognize that the processing of information is probably not referrable to some monolithic single process, but is mediated by a number of available "strategies." Nor do we see strategies as necessarily tied to situations as available for use: they may also adhere to persons and come to represent typical ways of actively handling (and even over-simplifying) the complexities of social life. We take it that being prepared to retaliate on the spot is one such strategy.

One of the goals involved in a strategy of being prepared to retaliate on the spot is that you should be able in this way to hold down the degree to which others will pick on you. Other things equal, therefore, we should expect a negative relationship between receiving hurt from others and one's retaliatory proportion: those who hit back on the spot will tend not to be picked on. Such a process might well be mediated by the rewarding effect on the actor of the success of his punishments in frightening others. But

this relationship is probably more complex, and more interesting, since the really successful child may well not have to retaliate at all by the time we start watching him, since he will have already moved things to the point where threat is all he needs to engage in!

Regardless, the fact of the matter is that there is in effect no relationship between being picked on and one's retaliatory proportion. Despite a slight positive tendency, they are essentially empirically independent (summated within culture correlations). Further, if we partial out the common correlation with the overall proportion of aggression, then the relationship between retaliation and being picked-on does become negative.

These facts, however, only became really interesting when we took a look at the relationship between a child's being picked on and his tendency to engage in self-instigated aggressions. Here the relationship is positive and highly reliable, and basically a surprise: the children who engage in a high rate or proportion of aggression which, on the spot, has apparently not been instigated by others, is a person who is the recipient (across all our observations of him) of a high rate or proportion of hurts from others. The more one hits when not instigated, the more one has been instigated at other times.

This fact has intrigued us a great deal, and we must confess, has led to some rather high flown speculation about all acts of aggression by children being in fact retaliations for past instigations! Perhaps even on the very first day when a child goes out into the community, or freely into his own family, he is assaulted in a displaced way because of something his brother had done to someone else the day before. From then on, possibly, he has a basis for retaliatory use of aggressive means. Perhaps the only issue to him is a strategic question as to when to use these means. This is probably going a bit far. But a difficult, but researchable question has been opened up for us.

These two strategies: "retaliation on-the-spot" as compared to "hurting-at-some-more-opportune time" (self-instigated scores) also remind us of the growing body of interesting work by my colleague John Roberts (see Lambert and Lambert, 1973) who has long been working with a classification of power styles. Retaliators may turn out to be Roberts' 'potents'; our 'delayed retaliators,' or self-instigators may turn out to be Roberts' 'strategists.'

But if retaliating on the spot holds down (relatively) being picked-on--at least to the extent of having "being picked-on" become independent of one's being aggressive--what, besides avoiding the immediate tensions of retaliatory aggression, does one aim for in engaging in self-instigated aggression? We don't really know, of course, though one effect of this would be to be able to use aggressive means, self-instigated, to get particular things, or to keep up one's status, but to do so under conditions one has chosen for himself. And one of the effects of aggression when one chooses' could well be that this would hold down the proportion of negative immediate effect acts received following the self-instigated aggression.

We do not yet have (and may not be able to obtain) reliable individual indices of "effect acts received:" to date we must stay at the risky 'cultural level'; but for what it is worth, there is a strong tendency at that level (statistically reliable) for there to be a lower proportion of 'discouraging effect acts' following aggression in cultures where there is a higher tendency toward "self-instigated" aggression.

13. Toward the Definition of "cool" Neighborhoods, Children and Cultures

It is not our intention to leave the matters of retaliatory aggression and self-instigated or "strategy" aggression as merely a matter of supposed cognitive orientations. We hope to relate or translate these phenomena in two directions: a) back into theories of action of partial reinforcement and of punishment, and into the general experimental literature of social psychology and behavior theory; as well as: b) out into the action systems that surround the child and thence into a characterization of kinds of recurring settings and neighborhoods that can be characterized as "cool" or low aggression places. Perhaps this will provide an interesting and fruitful way to view the six cultures themselves insofar as they relate to the actions of growing children!

Let us look first at how our data relate to some recent experimental literature and then look to the definition of "cool cultures."

a. Strategies for holding down aggression from others: an experimental paradigm.

Our findings (see Section 12) regarding the strategy of "on the spot retaliation" are reminiscent of an interesting series of studies being reported by Richard Pisano and Stuart P. Taylor from Kent State University. They have been experimenting on some strategies for holding down the aggression of people who were selected for their experiments as not being afraid to use electric shock on other humans. These subjects were dealt with by a stooge. The experimental situation called for the subject and the stooge to each set a level of shock that the other must receive if he loses in a game. The game calls for both parties to push down a plunger and to release the plunger on a signal: the quickest person 'wins' and receives no shock, while the level of shock he set is visited upon the loser. In actual fact, however, it is the experimenter who decides who wins. The stooges (to greatly simplify) use one

of four different strategies. Three of these strategies did not do much to 'cool' the game. If the stooge set his shock consistently high (so as to scare the opponent into setting it low?) his opponent did much the same. If the stooge set it consistently low (to lure the other into doing the same?) the aggressive competitor continued to keep the shocks up! Making receipt of money to be contingent upon lowered settings also did not work. What did keep the shocks at the lowest level achieved in the experiment, was having the stooge follow a tit-for-tat strategy: if the subject set the shock level high, so did the stooge, if the subject lowered it, the stooge did the same.

Immediate retaliation toward the other person when that other has been led to hurt one sounds like this last, tit-for-tat strategy, to some degree. But if it "works" we're not sure it's because of the actual differential reinforcement set up for low shock settings, or because of the tit-for-tatness qualities of the strategy. Regardless, however, this experiment by Pisano and Taylor led us to reanalyze (at, again, the cultural level alone) our scores, to see if an actual tit-for-tat index would provide a more clear index of the strategy that may 'cool the game' and hold down the degree that one is picked on. We therefore developed an index, for the total culture, of the overall proportion of times that when hit, children hit back; when insulted, they insulted back, when hit sociably, they again retaliated in kind.

It is pleasant to report that this index, at the cultural level, works more clearly than does our over-all retaliatory score (though these two are certain to be very highly correlated at the individual level). The higher the tit-for-tat score in a culture, the lower is the proportion of aggressive instigations received, on the average, by a child. The correlation is -.59, but lacks statistical significance. But this certainly erases the non-significant positive relationship found when the culture's mean retaliatory proportion was used.

We have also checked out the effects of a retaliatory strategy by the use of partial correlations at both the individual and cultural levels. Although such partialling is probably statistically risky, it is again worth reporting that at both levels, if we partial out the overall aggressive output proportion for the child or for the culture, then the relationship between retaliation and being picked on moves away from its (slightly positive and) independent relationship and becomes strongly and reliably negative. It may be that this, when further checked, will provide a basis for more strongly suggesting that a strategy of retaliating-on-the-spot when attacked tends to inhibit attack over time. Further individual level tit-for-tat analysis may help us to begin to understand more about the way this strategy works and why it is sometimes chosen.

b. On other components of strategy: sneaky aggression sent

When we have indexed the retaliatory behavior of a child and then indexed his tendency to start attacks on his own, we have covered a good deal of the ground toward an exhaustive category (in a rough way) of strategies. At least one other stretegy must be looked at, too, however. This is what we have come to call, in our own biased manner, 'sneaky' aggression.

This occurs when our sample child hurts another after that other has done something which has no apparent relationship to hurting our child. An example would be the younger child who, when offered help on a task by his older sister, uses this occasion for socking her firmly. The aggression is "sneaked in" after a helping behavior on the part of the other. A good deal of such behavior is picked up in our index of the 'range of behaviors which lead to aggression' which we discussed above, but we are also developing more specific indices which can be related to the other context variables at the individual levels and the cultural one. Sneaky aggression, of course, provides

for surprise attack with, again, lowered chance of retaliation from the other, and it also does not call for a readiness on one's own part to retaliate on the spot.

We are left then with a classification (primitive to date) of three kinds of aggression by the acting child: immediate retaliatory, self instigated (which may be largely delayed retaliatory) and 'sneaky' (which also has strong and consistent positive relationships with being 'picked on,' and may in its own turn be largely a delayed and even more hidden form of retaliation).

This discussion can be clarified by turning once again to Table 4-3 (p. 21a) where this exhaustive classification of aggression is displayed. The top large row of the Table is given over to a description of retaliation (and to a classification of effect acts, of course). The second row describes the self-instigated situation. The third row is devoted to what we mean by "sneaky" aggression. We shall turn in the next section to a discussion of the fourth row which deals, not with "sneaky aggression sent" by the actor, but with "sneaky aggressions received" by the actor.

c. Toward an index of over-all coolness of a community or culture: sneaky aggression received

We are now in a position to consider the beginning of a definition of a cool or low-aggression community or culture, are we not? Because there are also at least three kinds of indices of the hurts received by children from the others around them that are suggested by this analysis: these are the rates or proportions of hurts received as instigations to the child (top row of Table 4-3, p. 21a); the rates and proportions of hurting effect acts received by the child (second and third rows of Table 4-3); and the 'sneaky' hurts which others visit on the child as "effect acts which follow non-hurting behavior on the child's part," as displayed in the fourth row of Table 4-3. (It will be interesting to see if the sensitivity of the social others around the child

is sufficient to generate a positive relationship between the child's own acts of sneaky aggressions and the sneaky effect acts of a hurting sort that he receives, when we have partialled out some other relevant but obsucring matters!)

Regardless, you will note that we have spent no time in this cross-cultural report in trying to decide which of the cultures is more aggressive than the other. There are a number of reasons for this, including those of good manners. But another reason is that I am persuaded that the whole issue of the definition of 'coolness' needs to be faced more fully, because of the interrelationships that probably adhere among the various strategies and counter-strategies of a child and those of the others around him. Immediate retaliation may cool the over-all situation in the sense that it decreases the aggressive instigations received, but it increases the aggressiveness also, (as my Scots forebears learned) because of having to be prepared to "retaliate on the spot" quite frequently. Delayed retaliations probably save on the total "hurtings" generated in two ways. The time delay leads to some forgetting and therefore to an overall savings in all forms of retaliation. Further, since the attacker picks his time and place, there is less hurting in the effect acts. Sneaky aggressions may beget sneaky hurt from others (we do not know yet) but it probably saves on total aggressions in a good many other ways.

Finally, of course, we must remember that most of these aggressive actions are instrumental to some other goal than the hurt of the target person. So we must also add to this analysis by looking to see how much the world complies with the demands, requests and aims of our child actor. And, of course, how much he complies with the apparent demands, requests and aims of those around him. Perhaps then we can interpret the coolness of a community of children in terms of our indices of all the forms of aggression, in relation to the overall compliance of every child with every other child! These are planned analyses, but as yet part of our unfinished work.

14. Summary and Overview

It is difficult to summarize a progress report: there are many new (as well as old) questions lurking in each section.

But the main lines of our emerging argument can be brought out by way of a running account of the content of this report.

The material in Sections one through three laid out the design of the Six Culture Study and placed the present report in the context of the history of the larger project.

In Section four we began to outline what turned out to be an exhaustive analysis of aggression sent by a child and received by him (See Table 4-3, p. 23a). We noted that the overall aggression scores do not decrease by age. But the assault component does decrease with age. We outlined also the general proportions of the occurrence of the kind of observable hurting actions that we were here interested in. This led naturally to a consideration of the purposive nature of the actions, with some generalizations (it's mostly instrumental) and some statements about how it is humanly good, but methodologically bad, that sadistic action is so infrequent in our observations! Some generalizations on the actions of others (including no action at all) which tend to precede or "cause" aggressive actions. We defined the notion of a retaliatory proposition and recounted in a preliminary way its psychometric properties. We then outlined some of the other measures of aggressive actions by our children out of the 34 eventual total of such indices.

Section five provided a preliminary report on the analysis of the "aggression domain," with principal component factors reported because of their bearing on our conceptual analysis of the important dispositions (or recurring complex events) in the area of aggressive actions.

In Section six we took a look at the overall success of some of the cultures in getting some of the measure of aggression to decrease with the age of the children and we presented some generalizations about the socialization of the selection of targets.

Section seven turned to the more proximal issues in action theory: the influence of the place in the community or in social space that the action occurs. In short, many generalizations regarding the possible influence of settings were presented. We emphasized the ways in which, as children grow older, they appear to learn to be much more "sensibly" sensitive about settings: they learn where and in whose company aggressions are most safely and usefully expressed.

In Section eight we provide an example of a more deep and extensive analysis of settings effects, in which data from the ethnographies and mother interviews and other sources are all integrated around a theory which involves feelings of co. fidence and safety. The model does quite well on being tested against the findings in the different cultures.

With the ninth Section we analyze and lay out the conditions for the selection of targets for aggression, and we approach the matter as having to do with discovering some of the "rules" for aggressive action in general, and in the different cultures.

With Section ten we return to the puzzle of the overall failure of aggression to decrease in proportion or frequency as children get older. A look at the feedback or "effect acts" received by the children when they have hurt someone show a good many general and specific things about the aggression we observed. There is a shockingly high amount of "ignoring" going on. Infants and younger children do much of this effect acting: they end up giving

most of the encouragements for aggression which get received by our little actors. It is clear that as effect actors get older they appear to act more "responsibly" when children act aggressively. Perhaps providing youngsters with more adult contact earlier might be good at least in the sense that the feedback to aggression may be a bit less reinforcing. Some signs of large displacements of aggression toward younger targets crops up here, also.

In Section eleven we analyze the apparently confusing patterns of the effect acts as they are received by the sample children in the six different cultures. We try to make clear what the rules or strategies might be in reacting to aggression in the different places, and these strategies may help to explain some of the differential cultural socialization success reported in Section six.

Section twelve deals with the central theme of this report. We return to retaliation and self-instigation of aggression and report some of our major findings when indices of these important types are related to other effects of action and to the social structural and family relationships under which these behaviors flourish.

By the end of Section twelve and in Section thirteen in particular, our dyadic approach to understanding aggressive interaction as a congeries of strategies becomes clear. We then relate the work back toward some interesting laboratory experiments and out toward a final exhaustive analysis of the aggression sent and received by our children. This helps us to define a "cool" neighborhood and "culture," and to suggest hypotheses to guide our next intensive attack on the strategic stances available to children and their socializers in the realm of aggression.

Much work which was done under the project is not reported here since some is not completed and even more is still being planned.

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